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The University of Chicago

SCANDINAVIAN
BUSINESS CYCLE THEORY
1898-1936

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE SCHOOL OF BUSINESS
IN CANDIDACY FOR THE DEGREE OF DOCTOR
OF PHILOSOPHY

AUGUST, 1940

By
ERNST W. SWANSON

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CHAPTER VIII

IMPULSE AND RHYTHM

The uncertainty about the exact nature of the business cycle which permeates all of the Scandinavian literature on the subject of causation and definition need not necessarily be indicative of the status of business cycle theory in Norway, Sweden, and Denmark. In fact, since there is reason to think that Scandinavian cycle theory is as advanced as it is in England and America (and in some cases more advanced), the afore-mentioned deficiency may point to some other element deserving attention. What in reality may be making for the lack of proper definition, especially, is not so much the broad and basic aspects of theory as it is certain detailed aspects of the general theoretical approach to the explanation of the phenomenon, namely, the rhythmical feature of the cycle.

There is, for example, the earlier view, typified by Davidson and Rohtlieb, that the "cycle" (neither writer would exactly think of the phenomenon as a cycle) is more or less a movement away from and towards equilibrium, implying that the development about equilibrium is not of an oscillating character. More recent theories, including the modifications of Wicksell's theory, seem to regard the cycle as an oscillating phenomenon of a continuous nature, although not necessarily perfectly "symmetrical" in appearance. (As has previously been stated, Frisch is quite exact in his treatment of the cycle as a continuous phenomenon.) Thus the one view would hold that the cycle is non-rhythmical and the other that it is rhythmical. The two views, so definitely opposed as they are, are in reality not the result of pronounced differences in theory but, rather, are the product of differences in assumptions. The first view arises from the fact that its adherents do not realize that they are making the implicit assumption that the economic order is inflexible; the second view is a product of the explicit assumption of inflexibility.

This statement requires further amplification.

A paradox of Classical economic theory is that it built up a system of thought around the assumption of perfect flexibility of the economic system in spite of the fact that the system at that time was in all probability more inflexible than it is even today. Of course, the abstraction made for a more systematized body of thought and helped, thereby, to lay the foundations for later thinking; nevertheless, it is most curious that Adam Smith, who, for example, was well aware of these more realistic aspects of the economic system, made such assumptions as he did with respect to the adjustment of prices to change, while Ricardo's systematique is the best example (in the opinion of this writer) of abstractions of this kind in the history of economic thought. It is true that the business cycle was not, at least to the extent that it is in these modern times, in those days a pressing matter. In fact, it is conceivable that the cycle was but a minor fluctuation then, because, among other things, the system was extremely inflexible, rather than flexible; i.e., it was so greatly inflexible that there were no opportunities for maladjustments to inflict themselves upon the price system. Consider, for instance, the market for most goods in those times; it was highly localized and the prices which prevailed for goods in such markets were so clearly established by long custom and practice which dated from the guild times that any changes which did occur were those solely of goods of a seasonal nature. The attempts today to maintain prices by comparison are perhaps far less significant. The capital market or the market for funds was far from the effective organization that it is these days; while the labor market then was non-existent.¹

Such high a degree of inflexibility, it is conceivable, would make for a great stability in the economy, so that aside from seasonal variations, other economic fluctuations were greatly minimized. Perhaps, too, it was because of these great inflexibilities that Ricardo set his very abstract treatment of price theory.

The older Scandinavian theorists are, or were, pretty much steeped in the traditions of the Classical school. Davidson still

¹It is true that there is really no definitely organized labor market today in most parts of the world. Nevertheless, there is a highly possible shift of labor from one industry to the other, or from minor trades to the other as compared to the caste system of England, even in the times of Ricardo and Smith.

adheres to a form of the "intrinsic" value theory of the old Classicists. The late Norwegian economist, Aschehoug, should go down in history as one of the most learned of expositors of Classical theory. Hardly need it be said that these and other writers have left their imprint upon Scandinavian thought, especially to the extent of carrying over the assumptions of Classical theory. Davidson's analysis involves today the assumption of perfect flexibility on the one hand, while subconsciously he thinks in terms of inflexibilities when explaining the cycle phenomenon. That approach is characteristic, not only of the older Scandinavians, but of all the older theorists. (It is true that Malthus had ideas opposed to Ricardo, but his doctrines were never given so thorough a treatment as were Ricardo's and Mill's.)

Generally, the modern cycle theorist regards the economic system as possessing some inherent tendency or tendencies to movements of a replicative nature and that the chief factor contributing to this tendency is inflexibility which in turn is a function of frictions and inertias. These inertias and frictions are not evenly distributed throughout the system; rather, some prices are more flexible than others, while the various agents of production have different rates of shiftability. The result is a form of lag element in the structure which makes, supposedly, for oscillating variations in prices and in movements of the agents of production under the appearances of stimuli of one kind or kinds.

Myrdal is, perhaps, the first of the Scandinavians to present a friction theory of price formation, but it must be emphasized that he was influenced by Wicksell whose monetary theory contained some of the rudimentary elements of a friction theory of the cycle. Myrdal was not the first to explain the cycle by means of a friction theory. Credit should go to an earlier Swedish theorist, Hamilton, who foresaw the importance of lags, and to Aschehoug who in 1908 developed the cycle as a friction phenomenon, but did not bring his theory beyond a very elementary stage. Frisch treats the cycle as an oscillating phenomenon involving impulses and rhythm, showing the influence of Wicksell. But it is Lindahl who really makes cycle theory into frictional theory, taking over the elements of frictional price formation which Myrdal presented in his Prisbildningsproblemet och Förändrligheten. Since then the Scandinavian theories have largely come to present the cycle as a continuous rhythm phenomenon arising

out of the inflexibilities of the economic system. It does not necessarily follow that the cycle is considered a perfectly symmetrical variation, for, if so, then there would hardly be need for theory. The difference between the flexibilities, or the assumptions with respect to flexibility of the doctrine of the Classical time and the doctrine of the present time is that in the case of the former period the inflexibilities were fairly uniform for all prices and for all the agents of production, especially in view of the fact that capital commitments were then relatively small as compared to present commitments, while present inflexibilities show great variations for different levels and strata of the economic structure, as well as for the same levels and strata.

Viewing the matter from the standpoint of a causative approach to the study of the cycle it must be agreed that there is some "inherent tendency" of the economic system to cause it to fluctuate as it does. On this score there seems to be general accord. But that is as far as agreement goes. There are numerous differences as to the elements that comprise the rhythmic tendencies and there is no well-defined accord as to what are the stimuli and how they react. Furthermore, there is a variety of methodologies in the application of the tenets that are held in common. In a large way business cycle theory has reached a stage which merely points to what may be expected from it in the future, but beyond that progress is yet to be made. What is called theory is mainly and in reality a part of a theory or the explanation of some portion of the total of economic variations that compose the cycle. One writer has provided an explanation of a sequence of events which mark certain cumulative aspects of the cycle; another writer treats with other aspects of a similar movement. A third develops the rate of reaction of certain stimuli, while a fourth, and so on, presents the nature of the stimuli in themselves. The watch lies torn apart. How it is to be put together so that it will render the service for which it is intended remains to be told; how much of a theory of the business cycle may be derived from the parts is the major problem before cycle theorists today. The study of causation is now primarily a study of synthesis. This section of the thesis will review the major theories of the Scandinavians with the thought that some basis of synthesis will grow out of such a review. Viele Wege führen nach Rom!

Before entering upon the review of the Scandinavian cycle theories it is necessary to establish some general principles of analysis. These will be treated in a more or less general way.

The Entrepreneur and Motivation

Business cycle theory and the theory of the single enterprise are most definitely related; in fact, not a small number of the Scandinavian theorists are concerned with the investment process and the investment commitments of the entrepreneur in the presentation of their respective theories. Since Myrdal's treatise on price formation appeared has this been especially true and, it may be added, that not only are the investment theorists of the same mind with reference to the importance of the enterprise but also the underconsumptionists. Therefore, it becomes necessary to note what is the motivating process of entrepreneurial action.

The behavior of business men is said to be determined in the price economy by the relationship of revenue and cost (either at their margins or by their averages), whether revenue relative to cost goes up or down. The entrepreneur is in a continual process of attempting to equalize his marginal cost and his marginal revenue, for thereby he maximizes his revenue, the latter being output times the difference between the average cost and the average revenue (the curve of the latter may be relatively inelastic or elastic, dependent upon whether or not he enjoys some kind of a product discrimination, upon the stage of the cycle, and upon the levels of income of the classes to which he caters and other factors). In the short run it may be argued that changes in revenue curve are more important than changes in cost curve, especially in certain stages of the cycle, while at other times cost variations may be the important element. Production may be increased or decreased dependent upon the movement of the marginal cost curve and the average cost curve, or dependent upon the movement of the average revenue curve and the marginal revenue curve agents of production will be shifted from one activity to another if the movements are favorable to the profits and such a shift of the agents may be found to have significance for the short-run phenomenon, the business cycle. Agents may be shifted from the production of consumption goods to capital goods under a favorable revenue-cost movement in the capital goods enterprises. (Some theorists make much of this shift and, as shall be later shown, there

is valid reason for emphasis upon this phase of the investment process.)

What is curious to note in an historical review of cycle theory, not necessarily the Scandinavian theory alone, is the slow process of development of thought with respect to particular aspects of the revenue-cost relationship. This process is by no means to be regarded as strictly evolutionary, nor is it to be looked upon as completed. Nevertheless, this development in thinking may be significant from the standpoint of tracing the approach to causality and to point to a way as to how the relationship between the various theories propounded may be observed and in turn their combined value for causality may be determined.

The earlier theories first became concerned with the business cycle in such a way as to indicate a far from clear understanding of the revenue-cost relationship, in particular, of the meaning of incremental or marginal costs and their place in the pricing process for the short-run situation. Entrepreneurs have long acted upon the behavior of their marginal (realistically, differential costs). The general use of the terms "overproduction" and "general underconsumption" indicates rather clearly the lack of comprehension of the revenue-cost relationship. The term "overproduction" took on different meanings relative to how this "symptom" of economic depression was viewed in the explanation of the fluctuations which give rise to it. In general, as time went on, concern became centered in the "overproduction" of consumption goods, again evidencing the above-mentioned misunderstanding of the relationship of revenue and cost. That an excess of capital goods exists at the same time as an excess of consumption goods would indeed seem paradoxical. But therein is evidence of how certain writers have developed parts of a short-run theory of value without apprehension of the connection of that part to the whole. In reality it is conceivable that no definite difference of a theoretical nature is to be found between any of the theories propounded, other than a difference of premise or a difference of misapprehension as to price dislocations which take place. If overproduction is to have any meaning at all it must refer to a condition with respect to the agents of production, namely, their unemployment because entrepreneurs have found it unprofitable to make use of them at the margins. In other words, the movement of the average cost curve relative to the marginal revenue curve has

been such as to force curtailment or, likewise, the excess of price over marginal revenue may have become less (assuming a state of imperfect competition) and has had the same effect, while the prices of the agents of production fail to respond because of inflexibility.

Application of this general analytical device will be made to the study herein involved.

As a rule the Scandinavians have not made much use of this device in their theories of the cycle. Rather they have come to place much more emphasis upon the psychological elements of entrepreneurial behavior through the device of expectations or anticipation. Myrdal, as previously stated, is largely responsible for this psychological approach to the problem of motivation. According to him (and to Lindahl, Ohlin, and others) profits and losses are adjustments in the value of capital. If an entrepreneur anticipates an increase in his future revenue the anticipated increase is immediately reflected in the way he discounts his income. Accordingly the value of capital increases and the entrepreneur is presumably motivated to further commitments thereby, depending, of course, upon the amount of "profit" his increase in capital value has brought him. Anticipation of a reverse movement leads to a contrary action. It is true, to be sure, that some of the aspects of marginal analysis enter into this device. There is no need to deny that such a relationship holds, but it is far from exact.

This psychological approach to the study of the motivation of the entrepreneurs possesses unquestionably no small value. It supplies certain aspects of the explanation of behavior that are not to be elsewhere found. It is not new; Pigou presented some elements of it several years ago in his treatise on Industrial Fluctuations. The Scandinavians have, however, given a slant to it which must be carefully examined.

The anticipation doctrine growing out of Myrdal's risk theory is unique because of that very same theory. Any reflection upon entrepreneurial behavior must of nature lead into the realm of uncertainty and to the notion of expectation. Myrdal, it may be inferred, contends that entrepreneurs place an evaluation upon all risks. Therefore, his theory must be so construed that he believes that all risks are measurable, at least ratings may be placed upon risks in a relative sense so as to give ordinal values

to them. If differences appear in ratings it would be because of differences of optimism or of pessimism. Naturally an entrepreneur may place a rating upon a risk which will not allow him to bear that risk. Myrdal proceeds to derive--theoretically, at least--probability schedules for the rating of entrepreneurial valuations of risk. These ratings or coefficients, are applied, as already noted, to the discounted values of revenue. He admits that these schedules, however, can only be derived rather roughly and, perhaps, summarily.

The more general implication is that anticipation (or expectation) is the foreseeing of an event (ex-ante causation). Because a change is anticipated it has an effect upon price formation backwards in time. Myrdal argues it is this element of anticipated change which is of primary importance, theoretically speaking, "because every price formation situation into the appearance of which anticipations have entered meets with change and therewith develops into a new situation." In reality Myrdal does not explain what he means by anticipation when he concerns himself with the foreseeing of an event. Davidson in a criticism of Myrdal's price theory holds, for instance, that the latter "confuses an event with the attempt of men to conceive of that event before it happens. That such an event should have effect upon entrepreneurial action is an impossibility."² Davidson goes on to say that what Myrdal regards as anticipation is no more than a weighing of data available with respect to a price formation situation. The data which are gathered apply to known situations but in no way do the conclusions derived therefrom constitute the anticipation of a future event. This bit of reasoning supplied by Davidson is perhaps all that is necessary by the way of comment upon the general doctrine of anticipations which is now finding wide adoption in this country and elsewhere. An additional point must, however, be made.

It is quite true that the entrepreneurs attempt to evaluate risks but to say that they anticipate is hardly in keeping with the meaning of the term. What they really do is evaluate the data which they do possess, as Davidson well establishes. In carrying through this process of evaluation it is probable that

²"Myrdals ekonomisk teori," Ekonomisk Tidskrift, XXXVI (1934), 129 ff.

at some periods in the cycle they may be more optimistic than usual, and therefore, a certain amount of "data" will be given a different evaluation than at other times. However, it is not possible to say that the entrepreneurs "over-evaluate" or "underevaluate" data, as Myrdal would perhaps hold, for in the realm of speculation there are no standards. To attempt to derive such standards would not even be "scholastics"; to put objectivity into economics is not possible, let alone meaningful.

So far as it can be said that entrepreneurs are more optimistic or more pessimistic, the theorist possesses a lazy man's way of describing an entrepreneurial act. In reality when he states that due to expectations the entrepreneurs made such or such commitments the theorist is avoiding, and justly so, the difficult task of exploring the mind of the entrepreneur, a feat which would take him outside of the scope of economic theory. There may have been a number of factors which may have lead the entrepreneur to act as he did, factors which may be political, social, legal, as well as economic. No one may be more important than the other, or a single factor may have been the motivating cause of his behavior. What exactly transpired would indeed be impossible to say. In other words the introduction of the notion of anticipation into business cycle theory is largely a simplification of the making of assumptions, even though it goes by another name.

As a final comment upon this aspect of cycle analysis it may be stated that other Scandinavians who have introduced the expectation factor into their theories are no more clear as to its meaning than is Myrdal. Ohlin, for example, in treating with the effect of the interest rate upon investment, concludes that "over-investment" may have resulted because of "over-optimism" with respect to anticipation of the effect of the lowering of the loan rates. Lindahl, too, finds reason to think in somewhat similar terms. Both forget that interest is a cost and that the borrowings of the entrepreneurs are guided to a considerable extent by the relationship of the marginal cost curve to the marginal revenue curve, especially in the short run. Over-optimism need not necessarily have much to do with the results of their commitments and it hardly describes the inability in many cases of entrepreneurs to make intelligent use of their accounting data. What is oftentimes mistaken for over-optimism (or pessimism) is naught

else but gross ignorance.

Lindahl and Myrdal, especially, with a most delicate finery of determinateness, decorate their analysis, using a language which seems intended to obfuscate and, as a result, achieve a high degree indeterminateness. What they and others attempt to attain in the form of economic objectivity becomes nothing other than non-economic for no other reason than that in their shift to objectivity, they unnecessarily revert to the extremely qualitative by favoring a touch of the psychological. This latter situation need not necessarily constitute a criticism of the value of psychology, but it must be recognized that the intent of these economists has forced them into positions unwarranted from the standpoint of economics. Their statements, for example, of probability calculations in actual figures of degrees of uncertainty have no more meaning than any other statement with respect to the "rating" of uncertainty, and it is questionable to talk of varying degrees of uncertainty when what is meant is varying degrees of the capacity to make judgments.

The quarrel is by no means with that of a quantitative versus qualitative economics, nor is there concern over positivistic science. Psychological explanations of behavior may be necessary for cycle analysis. The inclination of people to save or to consume, or the explanation of entrepreneurial action may after all rest on certain elements of a subjective nature, all fully dependent upon the capacities of people to cope with uncertainty.

The Investment Process

For some reason or other (these reasons will be dealt with later) the entrepreneur is "motivated" to undertake further commitments. It is largely this "positive" action on the part of the entrepreneur which sets the economic processes in movement; only passive action comes from the side of the consumer, whoever he may be.

Having been "motivated" the entrepreneur begins to make a series of investments. For some reason or other (as shall be treated later) the investments resulting thereby lead into extended movements away from the former position of stability (or equilibrium). This process of investment is basic to the whole of business cycle theory; hardly any theory of the business cycle

escapes the examination of the process, even though it be purely monetary theory or underconsumption theory; and even the psychological theories must be tied up with the process. Hence this chapter which is introductory to the general study of impulse and rhythm may well be extended to cover an examination of some of the elements of the investment process.

The older theories of the business cycle pay especial attention to the commitments which the entrepreneur makes in durable capital goods.³ However, the commitments made by the entrepreneur are far more than in durable capital goods. As has been previously contended, no business enterprise can get under way without a complete constellation of assets, made up of current capital (assets) and fixed capital (assets) and, generally speaking, no enterprise can operate or continue in operation without such a constellation. This does not say that the investment in durable capital goods is not of importance for the study of business cycle theory, but it must be pointed out that the investment process is of a peculiar order or sequence and, above all, involves certain directions, all of which is of importance for the understanding of the cumulative movements (or rhythm) of the business cycle.

There is much being written on the theory of capital these days, and the writer must confess that most of what is being presented as theory of capital is completely beyond his understanding. Clearly, those who still adhere in one way or the other to the Böhm-Bawerkian roundaboutness-of-production theory are unable to see the wood for the trees.⁴ Others are concerned so greatly with the single investment that they lose all regard for the problem of the theory of distribution. In order to avoid these controversies at this stage in the learning process, this writer shall disregard as far as he can the current theories and will present, as a pragmatic expedient, such concepts as will be most helpful

³Of this group Spiethoff has unquestionably exerted the greatest influence upon some of the modern theories of overinvestment. Cassel follows rather closely Spiethoff's mode of analysis, while Wicksell states that if he were to write any theory of the business cycle, he would take out along such lines as developed by Spiethoff.

⁴A number of recent writers associate Wicksell all too intimately with Böhm's theory. The present writer considers this a misinterpretation of Wicksell's capital theory which really is straight marginal productivity theory.

for the present problem.

Capital means the amount of the capitalized expected incomes from future operations of the enterprise. This definition holds fairly well from an accounting viewpoint, the viewpoint taken by the entrepreneur. In a way the valuation method of accounting, quite crudely, to be sure, attempts to derive some kind of a discounted value of assets entered upon the books of the enterprise; i.e., what appears upon the books is some form of going concern value which in essence is a constellation of discounted values, derived in a rather arbitrary way.

This constellation of assets values may be quite different from firm to firm. The assets of a wholesale grocer may be made up largely of merchandise inventory and accounts receivable, both of which may be turned into cash in a relatively short time (the accountant talks of the liquidity of the assets, having in mind some kind of a ready marketability). On the other hand an electrical power producer has, usually, a very small amount of current assets on his books, while the fixed assets constitute the greater share. This is a difference which is given great weight by the overinvestment theorists. The contention is that as assets get more and more durable--for example, big rolling mill machinery, dynamos, continuous strip mills, etc.--the tendency is for the enterprise to become rigid and any commitments made in such assets make for considerable difficulty when price changes take place in the products produced by this assets. In other words, a firm which uses less durable assets (or capital goods) for the production of its products is less inflexible and can, therefore, be more readily adjusted to change. Hence, one of the chief factors contributing to the cumulative movements is the commitment in durable capital goods, or hard-to-liquidate assets.

There are times, however, when the writer feels that too much weight is given to this aspect of entrepreneurial commitments. A firm may be placed into as great, or even greater difficulty through investment in inventories. Inventories have been purchased at a certain price. A decline in prices takes place (as in 1920). The firm will be hard put to meet with the decline in values under such a turn in events and will be hard pressed by its creditors, for usually inventories purchases are made on account and payment is called for within a short period of from a

month to sixty days. Whereas an investment in fixed assets is made upon the basis of borrowed or owned funds; if it is a case of borrowed funds, usually the only claim that the creditor has against the firm for the time being is the interest on the funds thus borrowed, and it is not as difficult to meet those requirements upon flexibility. But this aspect of the problem is perhaps of less importance than is still another.

Strictly speaking, it seems as though inflexibility applies, not necessarily to the durable assets, but to the whole constellation of assets. A firm is a particular combination of assets; without that combination it is not a firm, at least not a functioning firm. The particular combination formed by the entrepreneur is usually of such a nature that it is adaptable to only one or a limited number of kinds of business activity. In other words, it is specialized. The machines, if any, are usually adapted to a specialized kind of production; the workers, including even the salesmen, are specialized; the management is specialized; while the whole attitude and the policies are directed to the production and sale of one or so products. Advertising campaigns are planned for one special purpose; the firm, as it gets older, becomes known in the business world for certain products, for certain services, and for certain policies; and as time goes on it develops a rigidity which marks it for the rest of its days and does allow for change only under the greatest pressure. Rigidity of the firm is one of the reasons why business shows a marked antipathy towards competition. It is this kind of rigidity or inflexibility which contributes more to the cumulative nature of the economic structure than does the possession by the firm of fixed assets. When change comes, the problem does not rest half as much in the disposal of the fixed assets as it does in the readjustment that is necessary in the relative combinations of the assets, the combinations of the executives, the attitudes and the policies of the firm, and the general contacts with the public.

In most cases nowadays, even with mediocre management, the problem with respect to the adjustment to changes in technology is not as great as it is supposed to be from the standpoint of inflexibility and cumulative. Since improvements in machines and equipment are going on on a continuous basis in modern times, management has learned to discount the possibility of such improvements, so that when new equipment is purchased, the write-

off account is set up to take into consideration the probability of obsolescence. Hence, when change does come, the firm is approximately or fully adjusted to the new technology. Consider the radio industry, as an example. Here the transmitters, although they could be used for a score or so of years, are written off within a seven year period, for example, and the greatest write-off takes place in the earlier years of the use of the equipment. Experience has shown that obsolescence sets in at about the seventh year. For certain kinds of highly specialized equipment the write-off takes place over even a shorter period. Another example may be cited. A publishing firm, with which the writer is acquainted, does not even handle its smaller presses on a strict depreciation basis. Presses which would ordinarily last ten years or more under normal operations are used for two years at the highest speed possible and over three eight-hour shifts, so that at the end of two years they have served their whole life. Obviously, under such a procedure there is no need for concern over change in the equipment. Still another development may be noted. In the industries with a high style or model factor, the dies and highly specialized machinery are treated mainly on a revenue expenditure basis, hence not even being put upon the asset ledger; while highly specialized machinery is manufactured to last but a short time.

In reality, the inflexibility which is the bugbear of business is the rigidity of the firm and the rigidity of the complete constellation of assets.

A final aspect of the firm rigidity deserves special attention. There is a very close relationship between firm rigidity and structural displacement. The growth of a new industry is in reality the combined growth of a number of firms, both of basic producers and satellite producers. Later, when the industry reaches its stage of full development and when market saturation sets in, a general form of rigidity has developed for the whole industry so that movement out of it is greatly retarded, for management in general has become so fixed in its notions that it simply hides from the facts. This trait may be clearly observed in the case of the railroad management, or in the case of the farmers. In each instance the investment process has taken a direction which under firm rigidity is quite difficult to change.

This approach to the analysis of the investment process does not deny the importance of capital accumulation for the ex-

planation of the business cycle. In reality, the theory of capital accumulation must be tied up with the theory of the rigidity of the firm in order to derive an adequate theory of causation from the standpoint of investment theories. What, in fact, has detracted to a considerable extent from the value of past investment theories is the failure to recognize this relationship. Further thought will be given to this aspect of the investment process in later chapters.

There is an additional reason why capital accumulation should not be given sole importance in the investment process relative to the effect of the process upon the rhythm of the economy. Labor is also an important element in the expansion that takes place during the boom.

As Knight points out it is impossible in a free society to buy and sell labor in the sense capital goods are bought and sold. That the two elements of production embody services of kinds which may be sold need not be argued. What is important to note is that the two are capable of contributing services to the production process and that the two may be substituted for each other under certain circumstances. That such substitution does take place points to a heterogeneity of the two agents which rests on rather peculiar differences which need not necessarily concern us only insofar as these peculiarities may contribute to differences of productivity, and it is because of differences of productivity that these differences appear. On this basis it would be possible to determine the value of labor in the same way as is done capital, i.e., by capitalizing the value of the future services of labor.⁵ To this extent there is at least similarity between labor and capital. Some would even deny this similarity. There are others who make much of the fact that "labor cannot be produced" as is capital. Strictly speaking, this is not true. The laborer must be trained and educated before he can be brought into the productive process. (An Australian bushman would hardly make a turret lathe operator.) To that extent the entrepreneur does "invest in labor."

⁵Lindahl does capitalize the value of the future services of labor. Of course, this capitalization must be carried on the books of the laborer or on the books of the economic society. It is not possible for the entrepreneur to capitalize such services, for all that he can do is to buy the services, but not the laborer.

For present purposes, therefore, it must be pointed out that even though the entrepreneurs do not buy labor, they do contribute under the modern industrial organization to a specialization of labor which places it on par with capital in still another sense. The practice of making specialists out of the laborers, tends to give labor a place in pricing process which renders it subject to certain inflexibilities which are of importance from the standpoint of explaining the immobility of labor and of explaining the wage rigidities that exist in the modern economy. Certain kinds of specialized laborers are no more capable of ready adjustment to changes in the economy or in that price structure than are the firms which display the rigidity already discussed. This immobility on the part of labor also contributes to the extended movements of the economy away from stability.

In one sense capital is quite flexible, i.e., in the accounting sense, for on a book basis its value can be easily adjusted to the price changes that occur from time to time (what that may do to the firm is another thing); but not so with labor. Labor cannot really place any book value upon itself that has a similar meaning; it has no surplus against which to write unforeseen value depreciation. In another sense, capital because of the specialized character which it may take in form, is extremely inflexible. To that extent there is another similarity between capital and labor. There is a difference, however, between capital and labor in the application of the two to the single enterprise, i.e., the former will be retained under a price reversal accompanied by a revenue reversal or else sold for what it will bring. If it is retained the books will be readjusted according to the new value given it. However, with respect to labor under a decline in revenue, the entrepreneurs have the recourse of discharging labor thereby relieving themselves of the burden of the decline in its value. That means that labor must take care of the writedown itself. Herein lies another element of rigidity, because labor is quite loath to take the "loss" and continues to demand a price for its services which is not relative to its productivity at the margin.

A concluding point to this chapter may now be made. In times past perhaps too much emphasis has been placed upon the importance of savings for the cumulative movement in the economy, too much weight in the sense that it has been assumed that all

that was needed to bring about a movement upward was an increase in savings, or a lowering of the rate of interest, and all that was needed to continue the movement onward once started was a continuation of savings, supposedly according to some rate of increase. It must rather be emphasized that it is in all probability the investment phase of economic activity which should be given the greater weight and, perforce it is entrepreneurial activity or behavior that should be given all the more thought in the explaining of the causes of economic variation. It is conceivable that one of the reasons why the overinvestment theorists and the under-consumption theorists arrive at different results is that too much emphasis has been placed upon the activating powers of saving.

CHAPTER IX

THE PROBLEM OF CLASSIFICATION OF THEORIES

The starting point for all science, including economic science, is the fundamental concept of knowledge that phenomena reappear with a certain degree of regularity. Of course it is not possible to maintain actually that the phenomena re-occur with precision or under circumstances that make each re-occurrence exactly the same as the one before. Rather what happens is that the situations making for the phenomena have sufficiently similar characteristics as to allow placing the phenomena in separate categories. The relationships which make for each category come to be known as laws or functions.

To be sure, it is impossible in any science to make an exhaustive classification of each thing. Nevertheless, classification does assist in analysis of the extremely complex things to an extent which permits the formation of certain generalizations about those things so that upon the basis of such generalizations "predictions" as to the future occurrence of an event is more or less possible. In fact, the success of prediction is largely dependent upon the extent of the classification and the generalizations therefrom drawn. It must be understood that the generalizations are in the main practical approximations to an exhaustive classification and they allow for the establishment of conclusions without the need for exhaustive classifications and, in addition, permitting the adjustment of the mind to the variations that occur in the situations surrounding the occurrence of the phenomena.

Any attempt to classify business cycle theories meets with the inevitable finding that such theory is mainly a heterogeneity of relationships which evidence the complexity of the phenomenon. An adequate theory of causation is still far from attainable and, primarily, for no other reason than that here is a complexity which in analysis has not been greatly tractable, so that the customary modes of analysis have not been very fruitful. A determinate knowledge of the business cycle is perhaps never to be achieved and it is virtually useless to hope for positive de-

velopments in the classification of various elements of the phenomenon. Hence, a classification of cycle theory per se becomes no small task.

Further significant developments in this field of economic thought will only come when a new analytical methodology is developed. Neither exact deduction nor pure empiricism are possible of separate application to the problem of the explanation of the nature of this phenomenon. There is no such homogeneity of observable things as to allow for the operation of exact logic, so that a considerable portion of deduction becomes intuitive; while it is not possible to apply straight a posteriori probability to the problem, since the observations in all instances do not lend themselves directly to mathematical statistics. The latter can be used only to serve deduction. Hence, if any fruitful analysis is to come in the future it must come through a method which combines both a priori and a posteriori forms of knowledge. Even so, there can be no hope for a purely scientific approach to business cycle theory. (This position does not dispute the value of logic, for in any science, economics or otherwise, logic cannot make mistakes. When it is said that people are illogical it is really meant that they do not adhere to the rules of logic. Vide Poincare.)

After a rather extensive examination of classifications of business cycle theories the writer has come to the conclusion that few theorists have been concerned with a real systematization of a priori knowledge of the cycle. In reality most classifications have been derived solely for the purpose of facilitating exposition of the classifier's own theory. To be sure, this approach is most useful from one standpoint but it does not contribute much to the understanding of the fundamentals so far developed, and as long as this procedure is followed so long will there be presented nothing but parts of a complete cycle theory and, then, only parts which will have rather meagre value for prediction. It has been perhaps natural for writers on business cycle theory to treat the subject in this way, for by restricting their interests to a very limited view of the whole, these theorists are able to achieve a much desired determinateness, even though such determinateness in final analysis has narrow application to the major problem. Thus, the goal has become to a considerable extent determinateness, rather than explanation, when, in reality,

the latter should be primary.

One curious fact is that classifications tend to run in dichotomies. Some differentiate between theories of accidental causes and theories of a constantly causative factor; although not intended by its users for such a purpose, this classification does bring out the fact just stated that theories presented are only parts of a complete theory of the cycle, while this dichotomy evidences failure to distinguish this fact for, actually, theories of accidental factors or causes are theories (hypotheses) treating solely with the impulse element in the cycle, and theories of constantly causative factors are theories (hypotheses) of the rhythmic element in the cycle. Others write of exogenous and endogenous theories, or theories which treat respectively with external disturbances and internal disturbances of the economic system; in other words, non-economic and economic theories. Such a classification has little meaning, for all that there is necessary to make an exogenous theory endogenous is to widen the scope of assumptions. Tinbergen¹ contends the real distinction between exogenous and endogenous theories is that the former have to do with changes in data, while the latter suppose the data constant. By that definition, all cycle theories are exogenous.

There are other classifications such as monetary theories and non-monetary theories, equilibrium theories and non-equilibrium theories, etc., etc.

One of the most systematized classifications of business cycle theory to be found in the Scandinavian literature (and for that matter in any language) is that of Johan Akerman in his Om det ekonomiska livets rytmik. It is indeed unfortunate that his history of cycle theory and classification are not available to English readers, for his treatment of the subject is in the opinion of this writer one of the best. It is not as biased in the theorist's direction of thought as are so many histories of the business cycle theory.

Akerman breaks down the cycle into two elements: impulse and rhythm; hence he deals with the causal factors of impact and reversal under impulse and the cumulative elements under the subject of rhythm. Impulse and rhythm come to form the two basic classifications of his system of theories. In turn he places

¹"Suggestions on Quantitative Business Cycle Theory," Econometrica, III (July, 1935), 241.

under the first element those theories which develop: (a) changes in the money market, (b) changes within production, and (c) changes in the exchange relationships. The sub-division for the theories of rhythm is as follows: (a) good and bad harvests, (b) psychological theories, and (c) capital formation theories. (Here is an element of bias.)

In the derivation of his classification of the theories of the business cycle the present writer takes what he thinks are the best elements in Akerman's procedure and combines those with the best elements in the classification derived by Alvin H. Hansen in his Business Cycle Theory. A further modification appears. The writer contends that a theory of the business cycle which is to be complete must give consideration, in general, to five phases of the cycle, namely, the initiating phase, i.e., the stage of departure from equilibrium, the cumulative phase upward, the point of reversal, the cumulative phase downward, and the recovery. The theory which develops along these lines need not be generalized description by any means, as has usually been the case with the theory which treats of similar phases. If the analysis is presented so as to give effect to the movement from one equilibrium point to another, then causality has been served. Indeed, such a theory would fall within the conception of a truly dynamic economics.

It is hardly possible to say that any one writer has developed such a theory, rather what is found in business cycle literature are theories giving some one or more phases of the cycle, but never all the phases. Haberler (Prosperity and Depression) attempts a complete theory, but it is so presented as to make it a form of generalized description, for he starts the cycle movement in the depression phase. In such an approach as this all that the theorist can do is to describe how the one phase grows out of the preceding and, therefore, it seems to the present writer that the explanation of the described phase lies in the assumptions made with respect to the preceding phase. Such an attack can hardly constitute causality. A different view is presented by von Hayek. He holds that the business cycle can be explained by showing how departure from equilibrium takes place, how the cumulative movement from equilibrium develops and, finally, how the crisis appears. Such a contention may not be tenable, since it may with good reason be argued that the depression is a reversal

of the cumulative movement upwards under changed conditions and not an adjustment to a new equilibrium and, therefore, this approach (which is quite generally accepted) need not necessarily be a complete theory of the cycle. (Hayek's assumptions with respect to the nature of the cumulative movement upward are never clear, for at times he argues as though he were working with a flexible system, then at other times with a system which is quite inflexible.)

Because of these objections, this writer considers it best to use a kind of primary classification (necessarily arbitrary) developed along such lines as would indicate how each theorist has treated with the various phases of the business cycle stated. A criticism may be made that such a characterization of the cycle does not rest on proven grounds and, also, that cumulation upward and downward are not necessarily self-evident and, hence, a classification of the kind proposed is not valid. Such a criticism, the writer admits, is partially valid, but it is a classification which will possibly lead to a better systematization of the body of theory under consideration.

As a classification secondary to the above, the writer proposes to segregate each theory according to the following subgroups: (a) savings, credit, and investment theories, (b) technology theories, (c) theories of the errors of the exchange process, and (d) extraneous factor theories. Into the first group of subdivision will be placed those theories the chief emphasis of which is upon the monetary and savings elements: gold, credit expansion, banking operations, and capital-disposal. The second group will comprise such theories as emphasize discoveries and inventions, large-scale production, the wear of capital goods and their replacement, technical indivisibility of the factors of production, etc. The third group will be composed of those theories which place particular importance upon miscalculations in the market, the profit motive, speculation, etc. In their case, perhaps the term "exchange" is not as suitable description of them as would be the "irrationality" theories. On this matter the writer is undecided. Into the final group will be gathered those theories which emphasize the non-economic elements such as sun-spots, crops, the weather, and so on.

A classification such as the following could be used in the place of the one just presented. The Scandinavians for the

most are overinvestment theorists of one sort or other. Hence, these distinctions could be made: (a) overinvestment theories, (b) underconsumption theories, (c) the psychological or errors theories, and (d) extraneous factor theories. In this case the original group of savings and credit theories would be broken down into overinvestment and underconsumption theories, with a subdivision of the overinvestment theories into the monetary theories and the nonmonetary theories. Thereby the technological theories would be given only indirect consideration insofar as one of the overinvestment theorists brought in some aspects of technology into his explanation of the cycle. There are two objections to this latter procedure as against the former. Although by this new classification it would be possible to differentiate more clearly the overinvestment theories and thus bring out the predominant feature of Scandinavian theory of the cycle, the distinctions thereby derived fail to bring out as well as the first form of classification the important aspects of inception and cumulation. A second objection becomes that this classification separates the overinvestment theories from the underconsumption theories. Both are related in the sense that in one way or other they are mutually concerned with the savings phenomenon in the economy and, furthermore, this writer "feels" that there is another mutuality in that the two kinds of theories attempt the explanation of similar aspects of the cycle. For these reasons he contends that the first classification is more desirable, but admits the value of the second. Gottfried Haberler follows with rather good results a classification comparable to the second, but the Scandinavian theories have certain peculiarities which do not lend themselves to the very same distinctions as would thereby be drawn.

Some may criticize the above subdivision on the grounds that it fails to give proper distinction to a number of theories which are either on the borderline or else may have a dual classification. The only answer to such a criticism is that were there a "sufficiently comprehension classification" established, then there would be no point in drawing distinctions. This secondary classification follows simply from a recognition of the eclecticism of many of the writers and, hence, allows for the fact that one writer may emphasize certain theoretical aspects more than others. The purpose, therefore, becomes that of applying a clas-

sification which will work hand-in-hand with the primary breakdown.

Therefore, the purpose of the classification proposed is to allow for a better analysis from two standpoints: (1) to determine how well the theorist provides for an approach to a "complete" theory of the business cycle; and (2) to allow for an identification of each theorist along the already accepted lines of identification. It may be added as an expression of hope, rather than that of an afterthought, that these classifications will aid in noting relationships between the theories so as to permit the development of a more "complete" theory of the business cycle.

CHAPTER X

THE INCEPTION OF THE CYCLE

Those theorists who regard the cycle as a continuous or a self-generating phenomenon, for example, Frisch, Einarsen, Warming, and, possibly, Johan Akerman, would question that there is such a phase as the inception of the cycle. For them, the analysis of the phenomenon may begin at any point, preferably the depression, and go on from there to treat with the remaining phases. But it has previously been stated that such a mode of analysis would not lead to a theory of the business cycle, for it would result merely in descriptive generalization, wherein the explanation of one phase would be assumed in the conditions given with respect to the previous state, i.e., in the sense that the conclusion would be stated in the premise.

The present writer contends that the self-generating theories of the cycle are not theories and that they do not set up a sequence of mutual causation. If the cycle were primarily a phenomenon of self-generation, then it would long ago have been thrown out of the economic system.

It is not to be denied that the economic system is replicative in movement, but actually, what is questioned is the nature of the continuity which the movements possess. It is conceivable that the majority of the Scandinavian theorists would adhere to this latter position. Wicksell and Cassel for example, find a form of periodicity to be prevalent, but hold that the movement would not appear unless started. The continuity of the cycle for them is not necessarily due to self-generating elements in the previous stage. Davidson, of course, would treat the phenomenon as episodic, i.e., each movement as a separate phenomenon.

In reality, the self-generating theorists are not strict in their adherence to such a theory. Frisch and Warming, for example, fall back upon a theory of the impacts of impulse factors upon the economic system in their explanations of the continuance of the phenomenon. Even though Frisch contends that the cycle "must be analyzed as a continuous process," he finds the impulse

factors may hit the system of oscillations at any point thereby inducing further movement. Hence, it is possible that the self-generating theorist would contend that cycle is the result of impact upon the economic system, with a self-generating movement resulting from the impact. In such a case the term "self-generating" takes on another meaning.

To a considerable extent the term has been misapplied. It dates from earlier cycle theory, at a time when the rhythmic nature of the economic system was not fully understood, or understood, at least, as it is today. Likewise, the other extremist view, as held by Davidson, is indicative of a misunderstanding of the instable nature of the economic system. Wicksell, whose position is intermediate, was one of the first to sense the implications of the rhythmic elements of the system. He likens the system to a rocking horse. It has inherent tendencies to movement of a cyclical nature. Given the impulse and there will be oscillations. For him the impacts come from discoveries and inventions, and they hit the economic system with an impact which sets in movement cumulative forces, just as touching a rocking horse starts it to swing. But the impacts must continue or the motion will die down, for the inherent tendencies to oscillation are not self-generating in the sense of being perpetually in movement once started. Thus the distinctions between the extremist views are "verbal" more than real; they are simply different interpretations of the inflexibility of the economy.

It is here contended that no adequate theory of causation of the cycle can be derived unless it goes out from an equilibrium point of view, i.e., no organized body of thought is conceivable without such a departure. A theory would be impossible without a statement of the movement of forces relative to some conditions which would show those forces equalized, causing no further displacement in the system. This approach holds for any science.

Most of the Scandinavian theorists assume some sort of equilibrium condition in starting the analysis of the cycle. In most cases, to be sure, the nature of the equilibrium position is never developed or else it is stated in rather inexact terms. That finding is nothing new in business cycle theory, for the situation is universally true.

The definition of an adequate equilibrium concept, as has already been developed, is no small task. For present purposes,

however, some such approach as follows seems at least of practical value. It is to be recognized that the real world is constantly in a state of progression, hence, the Casselian concept of the progressive economy has direct application to the present argument. If there is a progressive economy in which the economic forces of price appear to be equalized in the sense that the coefficients of elasticity of supply of the agents of production are taken to be the same,¹ why is this condition of stability broken so that the rapidly cumulative movement upward of the cycle is set in motion? The purpose of this chapter is to find the answer to this question.

A. Technology Theories

The term "technology" is here used in the special sense of applying (1) to those problems having to do with the proportions of the agents of production used in the producing of economic goods and to the problems of the allocation of the agents; (2) to those problems arising out of the improvements in the agents and in their use; and (3) to the problems of accounting for costs of the use of the agents. The technological aspects of production tend to affect the behavior of the entrepreneurs, and under proper motivation it is conceivable that a cumulative movement away from equilibrium will be generated. A difference between marginal cost and marginal revenue, to use the present-day terminology, because of a rise in the price of one or more of the agents; a difference between average cost and average revenue may be affected through the introduction of an improvement in production; or for some other reason an entrepreneur or a group of entrepreneurs may be led into changing production and thereby bringing about the re-allocation of the agents of production, all of which may have sufficient impact upon the economy to break equilibrium.

¹It is assumed that there is some kind of "full employment" of the agents of production, in the sense that there is no agent unemployed who is willing to work. The term "willing to work" is used to apply to all forms of agents. The theory of full employment is far from a settled issue. There remains much to be written upon the subject before an adequate concept is derived.

1. Inventions, Discoveries, and Improvements in Technology and Production Methods

Wicksell.--In an early article² Wicksell reaches the conclusion that conjunctural changes may be traced to real causes "which are independent of changes in the prices of goods." Technological progress does not come evenly but in spurts, and involves the transformation of "circulating" capital in great quantities into "fixed" capital. Herein, accordingly, lies the key to the rising conjuncture, for the ever-faithful associate of the movement upward is the increase in "fixed" capital. The elements of technological progress, improvements in production, inventions, and discoveries, give rise to price changes, through the demand which they create for agents of production. These price rises are further stimulated by the banks which keep down their interest rates.

It must be emphasized that Wicksell does not consider the lowering of the bank rate an impulse factor in any realistic sense. The initiative to the price rise is technological progress, especially the fact that it does not show an even progression "but now is hastened and now retarded."³ It may thus be said that he is looking for the cause of the difference between the natural rate and the loan rate, for he recognizes the inflexibility of the usual bank rate; hence, the causative fluctuations come in the natural rate because of the greater profitability due to the improvements which the entrepreneur may introduce.

It is not clear whether the technological changes come when the system is in disequilibrium or in equilibrium. Conceivably, it is under the latter condition since he contends that the discoveries come in spurts, the assumption, therefore being that the system has time to readjust to change before other change makes its appearance. On the other hand, Wicksell seems to talk in terms of stores of "circulating capital." This may indicate that he has in mind stores carried over from a period of depression. However, he states otherwise in the Föreläsningar, for it

²Knut Wicksell, "Krisernas gåta," Statsökonomisk Tidskrift, XXVII (1907).

³Wicksell adheres to this position even in his last edition of his Föreläsningar (The Lectures).

is the free capital, or savings which allows for the expansion⁴ under a credit system. Presumably what is necessary to give full effect to the introduction of the improvements is some kind of an elastic credit structure, e.g., a commercial banking system. Nevertheless, the initiating element is the entrepreneurial reaction to technological change.

Petander.⁵--This writer discusses rather carefully the importance of inventions for the agricultural prosperity and, indirectly, touches upon the effect of technological improvements upon the broad contours of the business cycle. However, these improvements are mainly means to the satisfaction of new needs or those already in existence and these needs "for several reasons grow comparatively gradually and apply to goods which by themselves constitute but a small portion of the total industrial goods aggregate. Therefore, these inventions and improvements exercise a relatively small effect upon the cycle." He goes on to say that their importance rests in the fact that they tend to widen the scope for speculation and entrepreneurship. "Rarely do they seem to have a direct effect upon the movement upward."

Thus Petander refuses to give technological change the weight given it by Wicksell. The admission that improvements tend to widen the range of entrepreneurship grants them more importance than he really thinks.

Cassel.--Although Cassel does not consider inventions and discoveries of great significance for his earlier business cycle theory, he does infer that they, among other things, constitute a latent production capacity which at the beginning of the cyclical movement substitute for needed savings.⁶ Here is a point which is of importance for later discussion with respect to the presence of savings during the depression.

In his later version of a business cycle theory Cassel gives much more weight to technological progress. In the 1932 edition of The Theory of Social Economy he contends that the cycle would soon level out were it not "for the events taking place from

⁴Pp. 180 ff.

⁵Goda och dåliga tider (Stockholm: Nordiska Bokhandeln, 1917), pp. 169-86.

⁶"Om Kriser och dåliga tider," Ekonomisk Tidskrift, VI (1904), 26-27.

time to time which cause a renewal of the whole trade cycle. Technical progress is one of these events." Just as does Wicksell, Cassel associates technological progress with great undertakings in the production of capital goods. "In the middle of the 'nineties. . . . the widespread application of various electrical inventions was apparently the immediate cause of enormous demands on fixed capital, which led to a new boom and thus started once more the fluctuations of the trade cycle."⁷

The general idea of his theory is that progress cannot be "absolutely uniform," because the system is stimulated at different times to accelerate its production of fixed capital goods. He does not, however, develop at what time the technical progress comes as an impact upon the system. Presumably, conditions must be ripe for them in the sense that a low rate of interest prevails --he has in mind the long time rate, for he states that the developments of the last century took place all the more readily because of the low rate of interest of the last two decades of the century. Since it is he who presents the concept of the evenly progressive state, it is conceivable that the stage of economic development is fairly stable when the change hits the system, because at one point ". . . . a trade cycle that is already much attenuated is bound to be restored to full strength by some new technical advance, and will then continue in the form of a fluctuation for some time."⁸ He does not treat too fully with any of these aspects of the initiation of the cyclical movement. It must be emphasized that he considers the rate of interest of chief importance for, otherwise, it would not be possible to undertake the construction of a considerable portion of the fixed capital goods. It is not clear how he evaluates the effect of technological change upon the action of the entrepreneurs from the standpoint of the natural rate or equilibrium rate of interest.

Gustav Akerman.--The majority of theorists who place emphasis upon the technical factors of the business cycle develop some version of a vertical maladjustment theory of investment, once they have presented the effects of the impulse of the change in technology; by vertical maladjustment it is meant that the effects of the impulse are distributed more or less throughout the whole system so that investment in capital goods as a result becomes widespread. The theory presented by Gustav Akerman points

⁷Pp. 645-46.

⁸Ibid., p. 643.

to a different development with respect to the effects of the impulse factor. He contends that Wicksell, for example, has placed emphasis upon the wrong aspects of technological change. Wicksell considers of chief importance the sporadic appearance of the improvements, an emphasis which overlooks the far more significant fact that the changes contact the economic system on the bias and are absorbed unevenly by the system. They are not necessarily accidental. This treatment of the effects of technical change, the present writer defines as horizontal. What results is overextension of certain branches of industry rather than all of industry. Akerman defines this form of overextension as structural maladjustment.

This approach to a technological theory of impulses is in the opinion of this writer an important development of modern business cycle theory. Therefore, he wishes to present other aspects of it as developed by Akerman.

Akerman finds that structural changes are more a consequence of the cycle rather than a cause of the cycle, especially with reference to the timing of the appearance of each phenomenon. The technical improvements are usually developed and created during the depression and are not introduced until such a time that the rate of interest is sufficiently low to off-set the risk-evaluations made by the entrepreneurs. Thus the improvements become impulse factors in the period of recovery. On the other hand the structural changes are the primary cause of the strength of the high conjuncture or the prosperity phase of the cycle and are, also, of weight as determinants of the length of that same phase of the cycle.⁹

This generalized application of a structural change has conceivably its roots in the uniformly progressive economy concept of Cassel. In fact, Akerman makes reference to such a concept in his discussion of the need for a dynamic theory. Strictly speaking, Akerman does not regard the Casselian concept as exactly dynamic, rather it is partially static and partially dynamic. He does not state what he means by static and dynamic, except insofar as he goes on to point out that both static and dynamic theory may be time theories, contrary to the stand taken by his brother Johan. Presumably, his theory of the business cycle is some kind of a

⁹"Om konjunkturväxlingarnas nödvändighet och grundorsak," Ekonomisk Tidskrift, XXXIV (1932), 22-23.

dynamic theory inasmuch as it purports to examine the reason for the uneven development of economic growth, which, as has been seen, may be horizontally extended, rather than evenly. In the presentation of the theory he assumes that at the time of the appearance of the technological improvement there is an even or generally stable growth of the economy, postulating thus the Casselian concept.

Warming.--Jens Warming is one of the earlier Danish writers on the theory of the cycle. His treatise on Gode og Daarlige Tider (Good and Bad Times) is quite representative of contemporary business cycle theory in Denmark and Germany which showed a marked influence of the Socialistic School. However, he is not entirely an overproductionist, but showed considerable eclecticism for that period (1903).

According to his hypothesis economic variation of a cyclical nature is primarily the product of accidental causes. The modern economic system (the capitalistic and money economy) is so constituted inherently that oscillations can appear, but there must be accidental causes to bring about the variations. ". . . there are a multitude of accidental factors which can give the economic system a push upwards or downwards, so that once the system is out of equilibrium it becomes cyclical in movement."¹⁰ Inventions are of importance; he gives especial attention to the building of railroads, canals, etc. He does not state exactly how these accidental factors contact the system, although he does build up a theory of cumulation. He is forced, however, to fall back upon self-generating theory to explain how the various phases of the cycle grow out of each other.

Jørgen Pedersen.--According to this Danish theorist, when such factors as changes in style, taste, technical progress, tariff increase, etc., occur singly then they are not effective in bringing about a marked departure from equilibrium. But when they occur simultaneously and at the same time in the same direction then they can give rise to a cumulative movement upward. One of the obvious difficulties in the application of the technological impulse as a causal element is the fact that there is no ready explanation of how such an impulse will induce a cycle. Wicksell, for example, states the effect is due to an inherent tendency in

¹⁰P. 115.

the system to take on impacts and generate those into cumulative movements. This is far from a satisfactory treatment of the phenomenon of an induced disequilibrium, for there is the implicit assumption that these accidental causes, which appear somewhat sporadically, carry considerable force behind them. There is, however, hardly any reason, on realistic grounds, for such an assumption, either implicit or explicit, especially when it is argued that a vertical maladjustment of investment may follow an impact. It is this difficulty which Pedersen senses and, therefore, there follows this interpretation of the effect of accidental causes. However, this approach is no more satisfactory than Wicksell's, for on a posteriori grounds there is to be found no evidence that there will be an accumulation of changes which as an aggregative force will bring about the cumulative movement from equilibrium. How such an accumulation may take place Pedersen does not say. He has not developed as yet a systematic theory of the business cycle, being mainly concerned for the present with an examination of certain institutional aspects of the cyclical phenomenon.¹¹

In examining the findings of the above group of technological theories as to the initiating forces induced by technical factors it may be said that no one of them, with the exception of Gustav Akerman's, gives a reasonably satisfactory explanation of the breakdown of equilibrium. As yet there is insufficient evidence of empirical nature to support the hypothesis that cumulative movements will take place once the impact occurs; with respect to the Akerman version there is, however, such evidence, although it still is far from complete. It is quite easy to develop a theory of the cycle basis on the introduction of technical improvements if it be assumed that there is a certain kind or degree of inflexibility present in the system to make the impacts cumulative. On a priori grounds such theories have validity, but on empirical grounds they do not. If the technology theorists can show, a priori, that there is a tendency for an accumulation of forces, rather than a tendency for an even distribution of the impacts of the technical changes, then there would be found greater validity for these theories. So far, only one theorist,

¹¹ See especially Pedersen's Essay in Der Stand und die nächste Zukunft der Konjunkturforschung, Festschrift für Arthur Spiethoff (München: Duncker und Humblot, 1933), pp. 228-33.

namely, Schumpeter, has been successful along these lines. Akerman's theory, on the other hand, is more valid on empirical grounds than on a priori grounds; it is not very clear why a one-sided development of investment should result in a general disequilibrium condition. Conceivably, a major industry such as the automobile industry and its satellite industries may take on cumulative forces of no small proportions; nevertheless, whether or not such cumulative movements will result in cyclical variations is another matter which still must be settled. Any theory which purports to explain the cycle either on the basis of Akerman's theory or on the basis of the other theories, must show how entrepreneurs in general are motivated to undertake investment programs of the scope and magnitude which these theorists have in mind.

2. Indivisibility of Capital

Cassel.--Associated with increases in demand is the production of plant and equipment in the anticipation for further growth in demand. The result is in many industries the production of large-scale plant in order that maximum efficiency be obtained. Furthermore, these large-scale units are indivisible, i.e., maximum efficiency calls for a certain sized machine or generator, so that rather than to expand by the introduction from time to time of small unit machines, it proves most profitable in the long run to make use of a single large unit. The result is that once the maximum-sized plant from the standpoint of long-run efficiency is completed there is for the time being excess-capacity; better: unused capacity. The importance of this peculiar nature of modern production is not to be overlooked in the examination of the investment process. Consider, for example, the preference for 100,000 KWH electric power generators as against smaller units; or the fact that the most efficient rolling mill these days calls for the great outlay of \$10,000,000 to erect a continuous process production unit, in which case there need not be even excess-capacity.

Cassel's position is that these developments in modern production are contributive only to partial disequilibrium conditions.¹² he disregards one aspect of this investment process; namely, that such heavy commitments as are quite common in modern

¹²"Om kriser och dåliga tider," op. cit., pp. 24-26.

times in large-scale plant and equipment or in large, single-unit plant and equipment, and may exercise strong influences upon the whole investment process. Should several entrepreneurs undertake similar commitments then it is conceivable that therein would be found a powerful impulse factor. The next thesis takes up certain phases of this notion.

3. The Superiority of Large-Scale Production

Brock.--"If we assume in accordance with reality that production on a large scale is not of a productivity equal to production on a small scale, it is natural that each and all will, if possible, expand his business in order to work under the best possible conditions." Therefore, there is a continuous tendency to a continuous movement away from equilibrium because of the superiority which comes from large-scale production. Entrepreneurs are induced to substitute continually for their present plant and equipment larger units of plant and equipment, because such replacements put them into a more favorable position with respect to their competitors. "We thus see that the primary cause of the expansion (the hausse) cannot be attributed to the recklessness of the entrepreneur, but rather it may be ascribed to the condition which forces human nature to choose the lesser evil; that is, to expand operations by means of borrowings so that each may hold even step with competitors and thus try his luck, rather than to be forced out, which would be the case if he continued on the old scale, with its old methods."¹³

On a priori grounds this hypothesis of the start of the investment process is perhaps more plausible an explanation of why the entrepreneurs are lead into "mass action" than is the Schumpeterian theory. Schumpeter contends that the majority of entrepreneurs take up new ideas and new methods of production because they are imitators rather than originators, that they prefer to wait until they have learned the result of the hardy few who at first adopted the new ideas. Brock's hypothesis tends to show that the adoption of new ideas is far more accelerative than Schumpeter leads one to think and, to be sure, it seems more reasonable to expect competition to force adoption rather than imitation; it is a matter of doing likewise or of not surviving. Here-

¹³Om den ekonomiska fördelningen och kriserna, pp. 209-210.

by is afforded a basis of explanation of how it is possible that a single impulse factor, say the improvement of steel production, may lead to a cumulative movement. The idea is nothing new; it is possible that Wicksell and others had in mind the same action on the part of the entrepreneurs. Brock does give the hypothesis a slant which is especially applicable to the problem at hand.

Brock ties up his hypothesis with a theory of credit expansion. Due to the competitive process of investment there is always an excess of demand for capital over its supply, and the only way the entrepreneurs can carry through their plans of enlargement of the enterprise is to borrow. Once one entrepreneur starts to expand, his competitor follows and, presumably, there is a whole process of credit expansion gone through. There is no clarity as to what really happens in the expansion process described by Brock. Nor does he state the nature of the equilibrium condition that holds prior to the start of the process.

Brock overlooks one important fact and it is that not all enterprises are subject to large-scale production. It is supposed, however, that he may contend (on good grounds) that a sufficient part of industry is so adaptable as to bring about the maladjustment under consideration.

4. Capital Replacement

Schønheyder.--Departing from the views of the theories which dwell upon capital growth and accumulation is the theory of Schønheyder, the Norwegian, who finds the cause of cyclical movements upward to be in the way entrepreneurs act with respect to capital replacement.¹⁴ Instead of immediately replacing depreciated equipment, the entrepreneurs will defer such replacement (in a progressive economy) until improvements appear and then buy new equipment. He contends that thereby there will be at times accumulated considerable sums (not necessarily sinking fund amounts, although this is implied) for reinvestment when opportune times arise. The assumption is that the entrepreneurs will prefer to continue in use their old equipment until the improvements become definite.

It is difficult indeed to understand what Schønheyder means by capital replacement. It would seem that he had reference

¹⁴K. Schønheyder, "Produktionscyklerne og kriserne," Statsøkonomisk Tidsskrift, XLVII (1927), 57-115.

to a stationary economy in which the production of capital goods is simply a matter of a physical replacement of the machines which wear out, the connotation being that replacement takes place not at regularly interspersed intervals but, for some reason or other, the replacement funds accumulate, then the replacements are made as a group. In a stationary economy this latter type of accumulation is hardly significant.

Viewed realistically, i.e., from an accounting standpoint, the proposition takes another hue. If the entrepreneur is to retain a depreciated machine (meaning: a machine for which the depreciation reserve is now equal to the original value less scrap value), then it means that he is planning to spend an amount sufficient upon parts replacement to maintain the machine in running order and, usually, when a machine is so old that it may be written off the books such maintenance expenditures will most likely be high enough to consider them capital expenditures and not revenue expenditures as would be the ordinary depreciation and maintenance costs. Under normal times, obviously, such a procedure would be more or less foolish for the majority of modern-day machines and equipment (it is true that a number of railroads have years ago written-off much of their rolling stock, especially engines, and now are maintaining such equipment on a capital revenue basis; But such a situation merely indicates in most instances improper accounting for depreciation). If times are abnormal, depression approaching or present, then it is possible that the entrepreneur will withhold the purchase of new equipment, maintaining as far as possible the old, whether depreciated or otherwise, and then, with recovery place orders for new equipment and machines. But the extent to which such orders are new investment or reinvestment commitments makes no great difference; it is probable that new investment will go hand-in-hand with the reinvestment and, together, they will accelerate the upswing. This, however, does not mean that this investment process is sufficient in itself to bring about the upswing from an equilibrium position and thus start a cycle. Schönheyder, himself, states that the entrepreneurs will wait until new inventions are put on the market; here, then, lies the primum causum.

Frisch.--Reinvestment, according to Frisch, may be regarded as the result of: (1) first what he calls the "repetition phenomenon," i.e., yearly primary investments by different magnitudes,

but of the same durability for the capital groups going into investment; and (2) the "distribution phenomenon," yearly primary investment of the same magnitude but with varying degrees of durability of the capital groups. The associated effect of these two phenomena lead to an oscillatory movement of capital investment--a movement in which the distribution phenomenon plays the chief role.¹⁵ Here is an attempt to identify durability with the time set up by the accountants for the depreciation write-off. The concern is with the degrees of durability of capital goods and any value which may be imparted to an expression of average durability would have no place in explaining cyclical movements, for the reason that the average, if it could be derived, would still be an average and it would tell nothing as to why replacement should take place "in groups."

B. Theories of the Errors of the Exchange Process

Some years ago there appeared in the usual treatises on business cycle theory a section devoted to the theories of a psychological nature, wherein was examined the errors of optimism and pessimism.¹⁶ The group of theories to be presented in this portion of the thesis would according to these treatises, be classed as the psychological theories. However, the present writer is of the opinion that the term "psychological" is rather inappropriately used in their connection. It was inferred that at times entrepreneurs behaved irrationally and, accordingly, their actions became so directed as to give effect to mass action of some kind or other. In any case the term is far from exact in usage.

Perhaps a more appropriate classification for these theories would be: Theories of Errors of Judgment. The expression, errors of judgment, conveys a slightly different meaning than psychological. In a strict sense no business man, unless he is mentally deficient, can be said to be irrational. In his position as an assumer of risk, it is frequently necessary for him to render judgments upon the basis of rather meagre knowledge and, frequently, too, is he possessed with a limited capacity for using any knowledge. His evaluation of the knowledge which he possesses

¹⁵Ragnar Frisch, "Sammenhangen mellem primaerinvestering og reinvestering," Statsøkonomisk Tidsskrift, XLVII (1927), 117-18.

¹⁶See especially A. C. Pigou, Industrial Fluctuations (London: Macmillan and Co., 1927), chap. vii.

is subject to errors, particularly, errors of bias. With reference to the knowledge in his possession, i.e., datum, errors, both of a statistical and of a non-sampling, nature may appear; in the former, sampling errors; in the latter, errors arising out of carelessness in taking the sample or in setting the limits of the sample and in its definition, so that non-homogeneous data may have entered. Under these circumstances in the judgment finally rendered on the basis of the data gathered, it is possible to come to an erroneous conclusion which, though largely based on mental reservations, need not necessarily be said to be of an irrational nature or psychologically definable. In many cases, furthermore, the data are most incomplete, and any judgment rendered becomes mainly decision by hunch.

As Myrdal would put it, the entrepreneur may, in any event, overevaluate or underevaluate the risk involved in a venture. Accordingly, his action will be predicted upon his judgment with respect to the risk involved.

Some of the theorists distinguish between theories of miscalculation and theories of speculation. In reality there is hardly any reason for making such a distinction. It is not to be understood that speculation is a necessary adjunct to miscalculation, nor is it correlative. However, from the standpoint of this discussion the two have a related significance.

With reference to their relationship to the business cycle it may be said that both miscalculation and speculation may be concurrent with any phase of the cycle, so that whether they are more important for any one phase is indeed difficult to determine. It is conceivable that certain phases give empirical evidence of great intensity of speculation, especially the so-called boom, but both speculation and miscalculation may enter into entrepreneurial action at the very inception of the cycle. It is even conceivable that miscalculation may be the most important factor in the initiating phase, i.e., the start from equilibrium, in the sense that the entrepreneurs may misjudge the market for new products and expand capacity to the point which is not necessary. In almost every theory of the business cycle there is some such element of miscalculation involved, for after all the fundamental element of any business cycle theory must be uncertainty.

Therefore, those theories which do place emphasis upon one or the other or both are, really, indirectly bringing in the

effect of uncertainty upon the action of entrepreneurs and the way in which business men react under uncertainty and of how speculation is a way of treating with uncertainty.

Speculation, as far as this writer can determine, has been given two meanings in theory and in general studies of the cycle. It has of recent years been used to mean that mob hysteria which sweeps economic society during boom periods, e.g., the stock market boom of the last decade. It also refers to the operations of a group of experts in commodities, stocks, and bonds in a central, organized speculative market as either the grain exchange, the copper exchange, or the New York Stock Exchange. The function of these experts, it may be contended, is to equilibrate price variations arising out of monetary conditions with respect to demand or supply, or both. In this function the element of anticipation enters in a restricted sense. These traders, having weighed the conditions determining the supply side and the demand side of the price formation situation, behave according to their judgments with respect to the limited knowledge which they have. In other words they are treating with uncertainty.

When, therefore, speculative interests along with outsiders shift from the momentary price fluctuation to such short-run movements of prices as obtained in the business cycle then they are going beyond their bounds in treating with uncertainty, for then the operations of the speculators turn from a weighing of a limited knowledge to an anticipation which rests not on a judgment with respect to the knowledge which is available but upon a certainty (and a most exact certainty) that is in reality but a fiction of the mob mind--"the new era philosophy."

If, then, the term speculation is to be used in the treatment of business cycle theory the distinction is to be borne in mind.

The term "miscalculation" refers, to be sure, to the errors made by business men in their judgments with respect to commitments, because "there is a time interval separating the moment of commitment and that of delivery." Again uncertainty enters, for each business man acts independently of the others--it is argued --and, hence, does not know what actions the others are taking with respect to the same observation.

To turn now to the consideration of the inception of the business cycle under the influence of miscalculation or specula-

tion, the question may well be asked: Can each have any influence?

If a group of business men were to behave all alike, even though they are supposedly operating and thinking independently of each other, then it must be that they are all reacting alike to the same cause. If a group, therefore, begins to place orders sometime after a depression has been in force, then it must be that those business men operating independently are expecting a price rise or that there is a price rise on the wing which shows promises of continuing, that or some other reason. Each, having then found sanction and support in the behavior of the others who have reached the same conclusion apart from the others, becomes now doubly certain with respect to his conclusion and now the wave becomes cumulative. It may become evident later that theirs were miscalculations, but at the present time they are dealing with certainties (which may rest in their mind, but that is all it takes to bring action).

Is this action--joint and several--the cause of the start of the upswing? Hardly, there must have been some other factor present to have caused the price rise to appear, in turn to have caused the business men to have acted, whether rationally or irrationally. That factor may be one of many things which may have brought marginal revenue or its anticipation ahead of marginal cost.

During the periods of "full employment of all agents of production," it may be argued that anticipation plays little, if any, role in price formation. The past period's profit will most likely be the motivating force as far as the entrepreneurs are involved in economic developments. It may be conceded, however, that during periods of shift away from equilibrium anticipation does step in and the future or expected profits become the controlling factor (or else future losses). That is perhaps why the cycle does swing in such great oscillations as it does. Anticipations are usually associated with an element of inertia and the inertia of inaction must be overcome before anticipated profits will supersede the effect of past profits or losses.

The chief exponents of anticipation, as has been stated, in the Scandinavian literature are Lindahl, Myrdal, and Ohlin. The usual procedure in their analysis of the business cycle is to make an assumption: "let us say that the entrepreneurs anticipate a price rise." Then they continue, "under the assumption such

and such will follow. . . . " Although this procedure is representative of the "type case method of analysis" in economics, the writer cannot understand how such assumptions will lead to any answers of value for the problem of business cycle causality from the standpoint of the application of anticipations. He may be striving subconsciously for objectivity, but he remains unconvinced as to the value of the technique.

But, is the above a criticism of the theories of miscalculation and speculation? The answer is: to the extent that the economic variation arising out of the action of speculatively-minded entrepreneurs is a product of their anticipations.

Brock.--Brock contends that speculation can result only in a partial disequilibrium. Speculation is primarily an accidental element which may or may not have cyclical influences. In reality, he confuses speculation with overinvestment of a horizontal nature, for what he has in mind is miscalculation on the part of entrepreneurs with respect to the potentials of their markets.¹⁷ To exemplify:

Alongside of the difficulty of correct allocation of the production media to the different branches of production which depend upon the extent of the market, there appears another cause which today is known as the more rapid growth of the general well-being. Since the demand schedules for the different classes of goods do not stand in a previously determinable proportion to each other, this circumstance together with an increase in wealth contributes to erroneous speculation and, in general, to difficulties of a proper dispensation of the newly formed capital. . . . Is there again question of a relatively new demand which must be taken care of, and of new groups of goods which are to be introduced on the market, the uncertainty or the latitude of speculation, becomes greater and with it there appears a possible, relative overproduction. Therefore, it is the usual for every industry to go through an "infant ill" of relative overproduction. . . . "

Yet, even if the cases are multiplied, Brock further argues, it is not possible to build up the evidence to prove that there may be general overproduction. Take the case of excessive railway building, "which is often given as a cause of the boom;" here, as an element of speculation, is indeed a very aggravating factor of the period of prosperity (the hausse), but it is only a "Begleitscheinung." Brock, therefore, concludes that "We must dismiss the thought that the cause of conjunctural changes is to be found in the speculation of the business man."

Brock's thesis is by no means unjustifiable; miscalcula-

¹⁷Op. cit., pp. 157-59.

tion and speculation, both, are concomitant phenomena of the cycle. He should have added, however, that no one can build up a theory of the cycle without including in the chain of causation, whether directly or indirectly, these phenomena.

Brock overlooks another possibility when he contends that the investment process which takes place during the development of new products, new ways of transportation, the exploitation of new resources, etc., are not of first importance for business cycle theory. He has in mind, of course, the expansion which takes place under a vertical investment process; but it is not inconceivable that the horizontal expansion which takes place under the development of a new industry is just as equally important.

Johan Akerman.--Although Akerman, strictly speaking, is an overinvestment theorist he finds it necessary in his development of an explanation of the turning points of the cycle to derive three causal factors for the change, one of which is the psychological factor. His hypothesis is that the psychological element is an important causal part of the capital accumulation process. "It is the anticipation of people with respect to the moment and to the future and not with respect to the objective components, which at these critical moments (short-time changes) determine their action."¹⁸ In other words it takes a certain mental state for people to behave as they do at the turning points of the cycle. He relates the seasonal turn to the psychological in the sense that it is at the upswing in the seasonal that entrepreneurs become more "optimistic" with respect to the return from future commitments and, furthermore, contends that the cyclical movement upward always comes with the good feeling prevailing at the time of the major seasonal upswing, fall.

Davidson.--In some ways the writer of this thesis has been influenced by the distinctions drawn by Davidson between what he terms "loyal and illoyal" speculation. (These terms are in the original language.) As near as can be determined Davidson means by "illoyal" speculation a price situation which has appeared when ordinary market forces have lost their strength. It is possible that Davidson has in mind the intrinsic value theory concepts of a Ricardian origin, especially when he is concerned with the "illoyal" or unnecessary speculation (tulip speculation in Holland

¹⁸Konjunkturteoretiska problem, p. 26.

--1565--would be an extreme case) for it is possible that he would say "that under 'illoyal' speculation the price of a product is more than its value." It is possible, too, that what he has in mind are the values for products as would hold under barter exchange. At one place he has spoken of inflation as a condition where the price is more than value and he has in view the value that would prevail when abstracting from changes in the value of money.¹⁹

Davidson finds no relationship between the beginning of the cycle and speculation. However, speculation appears to have a definite part in the cumulative movement upward, particularly the speculation of the stock market, and in the examination of price movements on the bourse, in connection with which he uses the term "illoyal" to mean "pool" operations and price manipulation, wherein competitive forces (the forces of perfect knowledge, presumably) have been pushed out of the picture.

Pedersen.--This theorist finds no impulse characteristics in speculation, but considers the speculative holding of inventories as an influential factor in limiting or extending inflexibility of the system.

Einarsen.--Einarsen presents in his Gode og daarlige tider²⁰ a theory of the business cycle which is almost impossible of classification for reasons as shall presently be developed.

Einarsen makes the following observation the starting point for a theory of the cycle: the upswing is always associated with a movement upward in prices (likewise the downswing of the cycle is always associated with a decline (general) in prices). Along with the price rise there is an increase in production and vice versa with the price decline. The explanation of this phenomenon rests in the "value paradox." It is learned that "Value is a mark of poverty, an indication of scarcity. Increasing values is an indication of greater scarcity, greater poverty, while falling values is an indication of increasing plenty, greater riches. . . ." ²¹ However, with the increase in goods, prices fall and pro-

¹⁹"De økonomiskakrisernas problem," Økonomisk Tidsskrift, XXXVI (1934), 242-43.

²⁰E. Einarsen, Gode og daarlige tider (København: Gad, 1904).

²¹Ibid., pp. 252-53.

duction is reduced by the entrepreneur for no other reason than that the price decline means a loss for him because the goods now being sold at lower prices were produced at a cost contemplating higher prices than those obtaining.

Whether or not this hypothesis is valid must be left for later discussion. The point to be made at the moment is that Einarsen has by this hypothesis attempted an explanation of the cycle which rests upon an assumption with respect to miscalculation on the part of the entrepreneur as to the future of the price for his product; yet he does not realize that the assumption is basic to his argument. Obviously, if the entrepreneur were aware of the fact that an extension of production would bring about the conditions stated then he would not make the commitments which bring him loss. In other words, Einarsen's is a rather rudimentary theory of errors of the exchange process.

It is very difficult indeed to impart any meaning to those theories which deal primarily with price changes. Einarsen's theory is far from an equilibrium theory, if it be a theory at all. In fact, it may be said to be chiefly generalized description of price movements rather than a statement of causality. It would be impossible to assume an equilibrium condition and, then, argue that a price change may disturb equilibrium. Under the "proper" theoretical assumptions with respect to equilibrium conditions price becomes a dependent variable. Hence it may follow that price is only an independent variable in the scheme of price formation under disequilibrium when it may affect the conditions of demand or the conditions of supply, or both. Under equilibrium, therefore, it must be held that some other variable must make itself felt before a price change takes place and brings about the necessary adjustment. Once a price change has taken place it will bring about changes with respect to the conditions involved; that is to be conceded, assuming the susceptibility of economic forces to price change.

Distinct, however, is the theoretical position which holds that a price change in one good may spread to another; the primary cause being, necessarily, something other than a price change. This is the theory of such earlier writers as Tougan-Baranowsky and Lescure. Tougan argues that if an exceptionally good grain crop is harvested there will follow so great a price decline that the total income of the farmers is greatly reduced and hence their

purchasing power. The result will be a general price decline.

Wicksell takes a contrary position to these views of Tougan and, likewise, to certain comparable aspects of Lescure's theory. Tougan and Lescure forget

that the purchasing power, which would thus be decreased under this assumption for the sellers of the mentioned goods, would on the other hand, be increased for the buyers thereof. On the whole it may be impossible to explain any price movement whatsoever without reference to the element which constitutes the only factor of comparison in all price formation, namely, money itself

(Note: "Whatsoever" has been translated as "particular" by the translators of Wicksell's Lectures.)

Johan Akerman is in complete agreement with Wicksell. His discussion of Tougan takes the same line of approach and thought.

On the other hand it is of especial interest to note the discordant view of Bertil Ohlin in this connection.

An unusually large harvest in wheat in several important producing countries has shown itself in several cases to force down the price of wheat so much that the value of the harvest was decreased. The farmers figure on a less than usual quantity of money income available for the next period and therefore decrease their purchases. A compensating increase of the demand²² of the bread-consumers as a result of cheapened bread does not appear immediately. Nor is the decreased demand of the farmer balanced by increases in other directions.²³

What, then, Wicksell and Akerman have both overlooked is the inflexibility in the price system.

C. Credit and Savings, Overinvestment and Oversavings Theories

If it be permitted to draw a generalization that may not have much validity, it may be said that the Scandinavian business cycle theories, with but a few exceptions, could be differentiated into the overinvestment (or capital accumulation) theories and the oversavings theories, and that the dividing line as far as nationalities are involved would be between the Swedish group of theorists as the overinvestment theorists and the Dano-Norwegian

²² Ohlin uses the word "efterfrågan" which may loosely be translated as demand. A more proper translation would be the amount taken, because it is inconceivable that Ohlin would make such an error in the use of the term.

²³ "Till frågan om penningteoriens uppläggning," Ekonomisk Tidskrift, XXXV (1933), 62.

group as the oversavings theorists. The former show on fundamental grounds the influence of the English Classicists, the Austrians, and Spiethoff; while the latter, although quite familiar with the English and Austrian traditions, reveal a leaning towards the German Historical School, the overproductionists of the Socialist School, and Lexis, Conrad, Eulenberg, and Bergman. Having made these distinctions it may be added that writers in both groups attempt to some extent to work in credit expansion as an auxiliary causal factor (it is only of late years that anyone has become a pure monetary theorist of the cycle; and there is only one writer so to be classed, namely, Cassel, who has departed almost completely from his earlier theory of overinvestment.)

The distinction between overinvestment theories and oversavings theories is perhaps rather indefinite. To attempt to explain the use of this dichotomy calls for extraordinary dialectics. The overinvestment theories place the main emphasis upon the accumulation of capital in the economy which in turn results eventually in the over-extension of the industries which produce capital goods in relation to the industries which produce consumption goods. In another sense it is argued that the investment process leads to a disproportionate use of capital relative to the other agents of production. The term "overinvestment" is applied in the case of the Scandinavians to the theories which treat with the capital accumulation process either on a strict savings basis or on a credit expansion (deposit creation, primarily) basis. To distinguish between the monetary overinvestment theories and the non-monetary overinvestment theories would be (in this case) to a considerable extent quibbling. On the other hand, the oversavings theories (sometimes called underconsumption theories) develop the argument that an increase in savings brings about such a state of affairs that there results a decline in the consumption of consumer goods and a situation of overproduction. The general idea is that the savings are taken up by the entrepreneurs in the investment process and this, therefore, leads to difficulties in the economic system of a digestive nature. The majority of the oversavings theorists in the Scandinavian countries consider credit an auxiliary factor of explanation.

Therefore, this third group of writers is composed of the oversavings (or underconsumptionists) and the overinvestment theorists. There are several reasons for bringing them together.

From a theoretical standpoint the following are the really significant reasons. Underconsumption theories and overinvestment theories constitute a distinction which rests primarily on a difference of assumptions, while they are alike as far as another important assumption is concerned, i.e., with respect to the inflexibility of the economy. In another sense they are also comparable; both schools of thought treat with the savings process as a part of the investment process. This treatment involves the examination of the behavior of entrepreneurs in the making of their commitments, as well as the action of the savers.

There is another element of similarity. Both the over-saving theorists and the overinvestment theorists place particular emphasis upon the relationship between prices for consumption goods and prices for production goods. The curious thing about either school of thought is that both of them are forced to make rather untenable assumptions for the purpose of getting a cumulative movement away from equilibrium. Very few of the underconsumption theories find use for the very logical proposition that the rise in prices may come from the consumption side, that with the continuance of the depression, the stores of consumption goods--which according to their argument are left over after the boom--have been depleted and a shortage is being felt which causes the appearance of a price rise in that group of goods. Perhaps, it is because this proposition involves a non-equilibrium approach that it has been disregarded by a number of this school. Pío, for instance, derives a mixture of underconsumption and overinvestment theory, but his cause for the inception of a cumulative movement is an increase in savings which in turn becomes cumulative upward. What happens is a fall in consumption goods prices and a rise in prices of capital goods.

Birck, who has developed another version of underconsumption theory, has to turn to the money side to bring about the price change.

Whether or not a general price change can arise from the goods side is a problem which must be left for consideration in the next major section on cumulation. The monetary theorists would argue, to be sure, that a general price change can only come from the money side, and hence prices are regarded solely as a dependent variable in the inception of a cumulative movement. Such a consideration of price would perhaps be permissible when assuming perfect flexibility in the system. It is possible that

exponents of inflexibility theories may find price capable of acting as an independent variable.

What is really paradoxical in business cycle analysis is the emphasis placed upon cost as an independent variable. The lowering of the bank rate of interest need but be mentioned as example of this significance which has been placed upon cost. Or consider the effect that a general lowering of construction industry wage costs would today have.

A concluding remark to this introductory statement may be added. Although a class of theories called the technology theories has been previously derived it can be said that even the authors of those theories are in general overinvestment theorists, i.e., those which do not emphasize oversavings (of course, there may be exceptions), while the difference made between technology theories and the others is primarily for the purpose of emphasizing the assumptions made by some of the overinvestment theorists in explaining the initiating phase of the cycle. In other words, it is virtually impossible to develop some forms of overinvestment theories without bringing into the theoretical framework the effect of what Wicksell calls "the real causes," i.e., inventions, discoveries, improvements in production, and so on. There must be some explanation of why entrepreneurs behave as they do, and there must be some explanation of why the "natural rate of interest" behaves as it does.

1. Overinvestment Theories

It is almost impossible to find a modern (since 1900) theory of the business cycle which does not in some way make credit and/or deposit expansion and creation an auxiliary causal factor. The overinvestment theorists, even as a group, do not escape this generalization, while the more modern underconsumption theorists, in general, recognize the modifying effect that credit may have on the price formation process. (One German underconsumption theorist, Neisser, is virtually a monetary theorist.) It is to be understood that credit expansion refers primarily to the deposit creation powers of the commercial banking system, although trade credit may be given weight (trade credit, however, would not be as expansionable as it is were it not for bank credit). The Swedes are especially partial to the credit expansion possibilities of the monetary system and in this section of the study of the

initiating phase it will be therefore "natural" to place primary emphasis upon credit creation as an impulse factor.

An examination of this group of theories would indeed be a much more pleasant task were it but possible to set aside the discussion of the "natural rate of interest." Unfortunately for such a wishful viewpoint a host of writers would be left out of the picture, for the majority of the Swedes treat in some way or other with the motivating force of the variations in the rate of interest.

Wicksell.--Wicksell commands first attention. For him the economic system is in equilibrium when the "loan rate" is equal to the "natural rate" of interest, and it follows that when equality exists between these two there is also equality between savings and investment while at the same moment the general price level is stable.

To set in movement a Wicksellian cumulative change from equilibrium, there is but necessary some stimulus which will bring the bank or loan rate below the natural, or bring the natural rate above the bank or loan rate. The banks themselves may provide the stimulus by a lowering of their discount rates. A change in productivity of capital (real) upward will prove reactive and cause an expansion of the capital goods structure, just as will the lowering of the bank rate, and set going also a Wicksell cumulative movement. In his Geldzins und Güterpreise,²⁴ Wicksell finds, for example, that a difference between the natural rate and the bank rate may appear "because of lowered wages, lower land or other rents, or entirely because of increased productivity of labor and the natural agents as the result of technological progress. . . ." In a review of a later date,²⁵ he adds that an increase of gold production may have a like effect.

At another point, however, it is learned that "a lowering of the loan rate, caused by an increased supply of capital (increased savings), should . . . by itself result in neither a rise nor a fall of the average prices of goods."²⁶ Presumably, equilibrium obtains, since thereby, the loan rate has adjusted

²⁴p. 130.

²⁵See the review of Petander's Goda och daliga tider, Ekonomisk Tidskrift, XX (1918), 71-72.

²⁶Föreläsningar, p. 172.

itself to the lowered natural rate. Here, in opposition to his earlier, but tacit assumption, he assumes perfect flexibility in the economy. (This inconsistency on the part of Wicksell may be pardonable, but when it becomes a source of dispute for other writers who fail to recognize the assumptions made, then it is no longer inconsistency but flagrant disregard of logic.)

Later on he corrects himself on this score, showing the former to be an oversight on his part. Thus, he finds that the fluctuations in the real rate of interest are the primum causum.

It is not the height of the capital rate itself which would make prices change. Rather what happens is that the loan rate does not become immediately adjusted to the changes in the real rate, 'so that the banks' influences on the prices is in reality a result of their passiveness, not their activity in the loan market.²⁷

At least, at most times the loan rate is the dependent variable, as it were.

Of most importance is the fact that Wicksell does not regard his theory of the difference between the natural rate and the bank rate as a problem of the speculative motivating forces of the business cycle. His concern, as he states it, is with "a gradual but constant pressure in a certain direction in the normal economic development. . . ."²⁸ However, "the changes in the value of money caused by credit. . . . are intimately bound up with conjunctural fluctuations, and these changes without doubt do affect the fluctuations to the extent of calling forth the crisis." As has already been noted, the impulse factor in the origination of the business cycle is not the difference between the loan rate and the natural rate. Economic progress comes in spurts and it is technological improvement which is, according to Wicksell, primus motus.

Wicksell has of course his critics and his adherents. A consideration of the position of these with reference to the subject at hand may as well be next.

Davidson.--Davidson denies, as contended by Wicksell, that the value of money and the price level of goods are "correlative concepts."²⁹ The price level may change not only because of monetary influences, but also, because of changes in the production

²⁷Ibid., p. 191.

²⁸Ibid., pp. 174 ff.

²⁹"Något om begreppet 'Pennyngens värde,'" Ekonomisk Tidskrift, VIII (1906), 460 ff.

of goods. Hence Wicksell would by his proposal attempt also to stabilize those price declines which come as a natural result of increased productivity. This stabilization would, to be sure, take place through a lowering of the bank rate. Such a procedure, according to Davidson, would not only be useless, but dangerous.

The verbal battle which followed this accusation of Davidson came to no end, since neither antagonist was clear as to the assumptions made by the other.

Brock.--Brock makes a point which is of interest.³⁰ He holds that Wicksell has confused the natural rate with the profit rate, and that entrepreneurial behavior is dependent upon the profit rate. Just because there are changes in the natural rate, it should not follow that there may be corresponding changes in the profit rate. Accordingly, it is the profit rate which brings about conjunctural movements.

Wicksell meets Brock's criticism by saying that he had at no time contended that the differences between the natural rate and the loan rate may lead to conjunctural movements.³¹

Brock also holds that the difference between the two rates can never be very great since if the bank rate should remain for a time low relative to what return may be made elsewhere depositors will withdraw their funds and place them into other uses. This argument of Brock's is far from clearly stated.

However, the point made by Brock that Wicksell confuses the natural rate with the profit rate may have been well taken, since others (Akerman, Pedersen, and Hansen) have sought to redefine the rate in this way.

Myrdal.--As has earlier been developed, Myrdal is a critic as well as an apostle of the Wicksellian theory. He hastens to pour oil upon troubled waters and then proceeds to modify the "difference rate" in light of the modern theory of anticipations and economic frictions. He finds that the disagreement between Davidson and Wicksell as to the correlativity of a stable price and the equality between the natural and loan rates, rests on a failure of two to fully appreciate the importance of the introduction of anticipation into the explanation of entrepreneurial behavior. Hence the Wicksell natural rate should be reconstructed

³⁰Op. cit., pp. 181 ff.

³¹Ekonomisk Tidskrift, 1909, n., p. 63.

to bring anticipation into a definition of it. Nevertheless, Myrdal does not find that a stable price level will obtain under the Wicksellian hypothesis, but he holds that the price level concept must be so reconstructed that it gives effect to the relative rates of reaction of the different prices going into a general price index and, furthermore, other weights stating their relative significance for entrepreneurial calculations of "rentability" should also be brought in to modify the prices going into the general index.

Myrdal contends that through the use of the weighting system he thus sets up, he gets away from the difficulties suggested by Davidson with respect to the effect of changed productivity upon the general price level.

On the basis of his redefinition of the natural rate and the general price level, Myrdal constructs the new conditions for monetary equilibrium. Myrdal's concern is, however, not with an explanation of how disequilibrium may appear but with the maintenance of a stable monetary equilibrium.

His contribution along these lines is a reconstruction of the general Wicksellian theory so as to introduce the more realistic conditions of inflexibility and uncertainty into the theoretical framework of a short-run theory of money.

In developing certain types of cumulative movements (Myrdal does not present a theory of the business cycle in the strict sense of the word) Myrdal makes use of such equilibrium concepts as "the equality between the natural rate and the loan rate" and "equality between capital values and the reproduction cost of real capital." With equilibrium prevailing he assumes that, for example, the entrepreneurs for some reason or other become more optimistic about the future return from capital, or that the bank lowers the loan rate, and he traces therefrom the cumulative movement away from equilibrium. The following quotation is typical of his mode of analysis:

Assume thus a condition of monetary equilibrium, i.e., the loan rate is equal to the natural rate. At the point of inception there is a change in the anticipations of the entrepreneurs in an optimistic direction with respect to the return from real capital; the result is that the values of real capital rise if, as we now assume, the loan rate remains unchanged. The income from capital also rises (the same rate and higher capital value). Assume further that . . . the members of the economy possess an unchanged total purchasing power with respect to the demand for consumption goods. The

result is that savings has increased with the increase in the total amount of income.³²

It is of interest to note that the new concepts of the "natural rate" and of "equilibrium" developed by Myrdal may to some extent pave the way for a form of analysis which will allow for a departure from the usual "stationary assumptions" about all factors or agents of production being in full employment. Thereby, a theory of the cycle may be constructed which would seek to explain the movements through all the phases of the cycle.

Johan Akerman.--It was stated in Chapter Four that Johan Akerman has attempted a modification of the Wicksellian concept of the natural rate. For him the natural or equilibrium rate is a profit rate, i.e., he contends that the real capital rate, as a profit rate, is a function of

$$R = f(t, L, I, \bar{p}, V),$$

where t is time, I is wages, I is the loan rate of interest, p is the relationship between the purchase of raw materials and their prices as finished goods, while V is the volume of sales.

If the analysis of business cycles is at all to be realistic it may be agreed with Akerman that consideration should be given to the entrepreneur's reaction to his profit and loss statement, which is a product of the loan rate, the wages, and the prices of raw materials and of finished goods. About the only way the entrepreneur has to judge the relationship between his marginal revenue and his marginal and average costs is through that statement and auxiliary data. Hence this functional relationship, as stated by Akerman, is an approach to the problem of entrepreneurial behavior which has a value that cannot be overlooked.

According to Akerman it is possible to argue that either the loan rate or the natural rate may be causal in starting a cumulative movement. In the case of the former action on the part of the banks leads to a lowering of the rate; in the case of the latter, rationalization (e.g.) of industry leads to a raising of the natural rate of interest (or the profit rate) relative to the loan rate. Furthermore, the price level may at certain times be activating. Now Akerman reaches this last conclusion is difficult to say. At least his argument is unique. The effect, in any

³²"Om penningteoretisk jämvikt," Ekonomisk Tidskrift, XXXIII (1931), 223.

event, of the variations in the loan rate or in the profit rate is a process of investment in capital goods.³³

Lindahl.--In the fourth chapter of this thesis it was stated that Lindahl attempts to discard the concept of a "natural rate of interest" in his analysis of bank policy and its relationship to the cycle. However, in this respect he is far from successful. He is forced to explain productive displacements of the Wicksellian cumulative process through an argument which states that the relatively long-time investments may or may not appear more "rentable" relative to the loan rate.

It is to be noted that Lindahl's treatise is not upon business cycle causality in the strict sense but rather with central bank policy. Hence the "primary causes" to which he has reference are those which he would term the monetary-political measures of the central bank and his problem is the use of these measures in the "control" of the price level. These aspects of "primary causes" are of value to this thesis only insofar as they clarify the usual analysis of the effect of changes in the interest rate, recognizing, to be sure, that there is a close relationship between business cycle theory and the short-run theory of the value of money.

A stable price level is the criterion of equilibrium.³⁴

³³For those who read English only, there is a short presentation of some parts of his earlier theory by Akerman in an article on "Quantitative Economics," in the Weltwirtschaftliches Archiv, XXXVIII (January, 1932), 34-65. He first developed his theory in his doctoral dissertation on Economic Rhythm, 1928, but a more recent statement of his position is to be found in Konjunkturteoretiska Problem, 1934; see especially chap. ii.

³⁴Lindahl sets up an "income-type" (or a commodities transaction type) of equation as a measure of the price-level. He writes it:

$$E(1 - s) = PQ,$$

in which E signifies the total national income, s, the fraction of it which is saved, P, the price level for consumption goods, and Q, the quantity of such goods during a certain period. Income has been defined in the fifth chapter of this thesis. It must be noted that Lindahl refers only to a price level of consumption goods and services, and it is the stabilization of these prices which brings equilibrium. This approach is the direct result of his treatment of income and it is a significant departure from the usual treatment of the price level. The price level for these goods must be "regulated in an inverse proportion to the productivity" with respect to these goods. This latter modification is, of course, an outgrowth of the Davidson-Wicksell controversy. Q is independent of P. See pp. 11-20 of his Penningpolitikens Medel.

There is a number of primary causes which may initiate a change in the price level and thus bring disequilibrium.

Among these primary causes we may take up as a special group the monetary political measures of the banks. Under the assumptions made the central bank has full authority to carry on a fully autonomous monetary policy, wherefore its measures should be regarded as primary causes from the standpoint of price formation. . . . The remaining primary causes . . . on the one hand are those factors which determine the demand for consumption goods, the offer of productive services, and the returns from the cooperation of the productive services. These causes are partly of an extremely objective nature such as changes which affect population, natural resources, and the conditions of productivity; and partly of a psychological nature such as change in the expectations of individuals and evaluations of individuals.³⁵

The impact of these primary causes is usually felt first through the income (E), through quantity of goods purchased (q), or through savings (s). At times it is conceivable that these primary causes can bring about a direct change of P , an effect which is later transmitted to the other members of the equation. Laws administered to effect a minimum price may have such a result. The monetary political measures (as Lindahl calls them) which may affect E are the manipulation of the interest rates and control devices of the central bank. A decline in interest rates means a rise in capital values and this in turn, presumably, higher incomes. To be sure, the total nominal income of the economy (Lindahl stipulates for the purpose of analysis a closed economy) may also depend upon the quantity of capital goods produced, i.e., the total production factors, natural resources, the participating capital goods, and labor. Changes in income may appear merely through a more optimistic viewpoint of the entrepreneurs with respect to future returns from capital. All of this argument evolves out of Lindahl's definition of income as being changes in the value of capital (as has been noted the services of labor may be capitalized).

Savings may also be directly affected by monetary changes, especially by variations in the rate of interest, as well as indirectly since the rate may exercise a secondary effect upon savings through the other factors in the equation.³⁶

³⁵Ibid., p. 19.

³⁶Lindahl gives in this connection a rather interesting definition of what he terms "forced savings." "An owner of a growing forest which is not to be cut until a later period may at the

Monetary measures may furthermore affect the Q in the equation. For example, a change in the interest rate will bring about different inventory accumulations. Or the interest rate may originate a re-allocation of the agents of production between the production of consumption goods and capital goods. Increased productivity will also increase the stock or supply of consumption goods.

It would indeed be impossible for any pure monetary theorist of the business cycle to deny the importance of technological changes, psychological and other changes for the explanation of how cumulative movements away from equilibrium are originated. The monetary theorist who limits himself only to the monetary devices of the central bank would indeed find it difficult to explain how some changes do appear unless by reference to these factors the influence of which Lindahl has neatly developed. Some of the monetary theorists would find it profitable to examine rather carefully the reconstructions of definitions by Lindahl (Ohlin and Myrdal, as well).

It should be added in conclusion that Lindahl's approach to the monetary equilibrium analysis reflects greatly the influence of Cassel.

Cassel.--Although Cassel does not use the expression the "natural rate of interest," he nevertheless derives an equilibrium rate. Cassel's equilibrium rate is a demand and supply price and he approaches a definition of it in the following way:

The rate of interest that comes to be fixed in connection with all other prices by our system of equations is, as we know, reckoned in so many per cent and does not contain the dimension of money. This rate of interest is, therefore, unlike other prices, absolutely determined by the system of equations, that is, by the conditions of equilibrium of the economic system. The rate is thus independent of the choice of the monetary unit, and it remains the same at whatever height this unit is fixed. This rate may therefore rightly be called the equilibrium rate of interest.³⁷

present time credit his income account with the increased capital value of the forest from period to period, a credit which may be considered addition to interest. But if he cannot raise money on the forest and does not have any other capital which he may consume, then he cannot consume this income but is forced to save it." (Italics are the present writer's.) Ibid., n. 1, p. 23.

³⁷"The Rate of Interest, the Bank Rate, and Stabilization of Prices," Quarterly Journal of Economics, XLII (1929), 515.

To him as to other monetary theorists, price stability is possible only when the bank rate is kept equal to the equilibrium rate of interest. Cassel naturally finds no relationship between the marginal product of capital and the rate of interest, at least in so many words. Some writers would hold that Cassel is strictly a monetary theorist of the business cycle. Such a characterization of him is hardly warranted in light of the numerous views that he holds on the nature of the cycle. It is quite true that he places considerable emphasis upon the influence of the creation of deposits by the banking system, nevertheless, in his business cycle theory he is quite eclectic. He finds, for example, a most definite relationship between the length of the cycle and time required to produce capital goods, while the progress of the economy is clearly a function of the growth and application of capital, and cycles are definitely related to this phenomenon.

Cassel furthermore, finds an indirect relationship between the secular variations of the general price level and the supply of gold: ". . . the gold supply in the main only affects the general level of prices by influencing the banks in their regulation of the provision of the means of payment."

With respect to the cycle, the gold supply has an "influence upon prices mainly in rising conjunctures."

In a general sense, according to his viewpoint, the purpose of the gold standard administration is to keep the price of gold as constant as possible. This means that the gold standard is nothing more than a regulated paper standard, regulated so as to maintain the price of gold, a constant regulation taking place through the manipulation of the bank rate above or below the equilibrium rate.

In his more recent writings³⁸ Cassel finds that gold has an important relationship to the passing depression and a very definite relationship to the crisis of 1929. He argues that an abnormal allocation of gold took place under an unwillingness of the creditor nations of the world to accept the normal form of goods in payment for the war, and this abnormal distribution of gold led in turn to a dislocation of the general price levels. To bring about readjustment from the deflation which has resulted, it will probably be necessary to inflate.

³⁸Gustav Cassel, The Crisis in the World's Monetary System, (2d ed.; Oxford: Clarendon Press, 1932).

It is perhaps needlessly said that the discount rate of the central bank is in Cassel's theory a primary motivating factor.

Stability of prices is possible only when the bank rate is kept equal to the equilibrium rate of interest. When this is done, the bank does not in any way interfere with the capital market, which is therefore left to find its natural equilibrium.³⁹

There is almost blind faith in the effectiveness of the monetary control devices of the central bank; in fact, Cassel's approach to the short-run theory of money is almost childishly naive compared to the highly sophisticated writings of his Swedish students and contemporaries. This attachment to the efficacy of the discount rate may be accounted for by the fact that Cassel has regarded the business cycles which have appeared since the World War as abnormal inflation and deflation phenomena which have as a background a world of distorted monetary and political relationship. The modern business cycle therefore, according to him, has no similarity to those of the last century. This attitude is to be found especially in his The Crisis in the World's Monetary System and in recent articles in the bulletin of the Skandinaviska Kreditaktiebolaget.

Brisman.--Brisman fastens in part his attention upon the recurrent fluctuations in the bank reserves. However, he finds that there is no definite impulse factor which sets the cycle into movement. He refers, for example, to Irving Fisher who has stated that any event which disturbs equilibrium is sufficient to initiate oscillations. But that is hardly the case for if "one throws stones here and there upon the water without any regularity, then there appears no regular movement of a wavelike character."⁴⁰ It is highly probable that there is in reality no one cause of cyclical fluctuations. "What one may point to is that the modern economic system has a powerful, natural tendency to move in even and unified waves. This inherent tendency is so great that it takes but little to keep the movement going." One element of impact which Brisman refers to as being of importance is the secular movement in prices which sets in motion smaller waves of a cyclical character. Now this may be he does not say. Presumably he

³⁹"The Rate of Interest, The Bank Rate, and Stabilization of Prices," op. cit., p. 517.

⁴⁰"Konjunkturväxlingarnas orsaker," Ekonomisk Tidskrift. XXIV (1923), 17-18.

has in mind some relationship between the secular price level and the money system.

Heckscher.--This writer treats solely with the course of the Wicksellian cumulative process and does not pay any attention to the initiation of the disequilibrium movement. His hypothesis is that there must take place credit expansion for both consumption goods and capital goods before the cumulative movement will be started.

Sinding.--Dislocations in economic growth and expansion take place only in a credit system.⁴¹ That is, borrowed funds through deposit creation are the primum causum of cyclical maladjustments. Discoveries, inventions, and good crops, e.g., will call forth economic expansion and capital investment, but unless this expansion is carried on through borrowed funds there will be no oscillations in the economy. Hence an economic system in which the growth of enterprise were based on the sale of securities and not on bank credit would not be subject to the modern, extreme inflationary fluctuations.

Frisch.--Two assumptions are set up by Frisch with respect to the difference rate, i.e., the difference between the natural rate and the loan rate as defined by Wicksell. If the transition from a negative to a positive difference rate is assumed to be accidental, then it may be argued that the difference rate may be regarded as an impulse factor. If, however, it is assumed that the transition is not an accidental phenomenon, but rather a function of what has previously taken place in the continuous cycle, then the difference rate cannot be regarded as an impulse factor, rather it must be considered a rhythm factor.⁴²

Frisch does not go into any detail with respect to either of these assumptions and, therefore, it is not possible to evaluate them in their proper light. As to the last assumption a discussion of it would mean the treatment of the cumulative aspects of the business cycle and it must, therefore, be left to the next chapter. There is no clarity as to what Frisch means when he speaks of the transition from a negative to a positive difference rate. If the difference is the product of a new discovery, of a

⁴¹"Ggenkapital og kredit," Statsøkonomisk Tidskrift, XLVIII (1928), 137 ff.

⁴²Frisch develops this thesis in a review of Johan Akerman's Om det ekonomiska livets rytmik, Statsvetenskaplig Tidskrift, XXIV (1931), 282 ff.

new invention, or of some development of business techniques then perhaps it may be agreed with him that the transition is at least to some extent accidental, and the difference rate takes its place with other accidental impact elements. Nevertheless, it cannot be contended that such improvements in business methods are entirely accidental under modern methods of research. Hence the term "accidental" must be used with qualifications.

Ohlin.--Ohlin's chief concern is with the examination of the theoretical aspects of price displacements. However, in the development of his price formation analysis of the short run, he does contribute to the thought on business cycle theory. It is indeed unfortunate that he has not had the opportunity to treat more with the problems which he brings up; it is this writer's opinion that the analytical approach resorted to by him possesses much for the further development of the short-run theory of money as well as of general prices. His is the problem of the study of prices under the conditions of inflexibility and uncertainty.

For the purpose of illustrating the cumulative movement of price either upward or downward under varied conditions of economic flexibility and elasticity, Ohlin makes certain assumptions with respect to the impulses which motivate the price movement. It will be of especial value to present some of these from the standpoint of noting how these assumptions make for rather unusual variations in economic data. It must also be noted that these assumptions in a fundamental sense depart considerably from the usual run of suppositions.

There first of all must be a structural division of the price system. It is not alone sufficient to analyze total demand and total supply and, especially, under different temporal stages of the production process. The goods which are in existence at the various stages Capital goods: (a) processed goods such as production media and consumption capital goods such as automobiles, furniture, etc.; (b) and goods in process and raw materials; Consumption goods: (a) processed goods such as shoes, clothes, and similar semi-durable goods; as well as non-durable goods and services; (b) goods in process and raw materials) must be divided into their various groups, while their changes must be observed; e.g., a reduced income for the farm population brings a reduced demand for some of the goods, while on the other hand an increased

production of foods.⁴³

In making his assumptions for establishing a breakdown of equilibrium (equilibrium, as developed in an earlier chapter, means for Ohlin stability of net income or gross income--calculated per unit of labor power) he treats as though motivation for economic change comes chiefly from the consumption side. In reality he merely places special emphasis upon the consumption goods side in order to establish his contentions that the Wicksellians have given too much weight to entrepreneurial behavior relative to the rate of interest. The theory of consumer expectation must be developed as well as the theory of entrepreneurial expectations (especially with respect to future incomes.) This viewpoint of Ohlin's should be given careful consideration for the very reason that it is possible that a continued movement away from equilibrium or up from depression (as the case may be) can only be sustained by the joint action of entrepreneurial and consumer expectation (or anticipation). Heckscher long ago had some idea such as this in mind but he was not clear as to the basic elements of anticipation; there have been others, Lindahl, possibly, who have thought less rigidly along these lines, but it has remained for Ohlin to clarify at least some of the more essential elements. Of course, it is to be understood that Ohlin gives full recognition to the significance of the rate of interest.

Among the assumptions for the start of a cumulative process are: (a) the lowering of the bank rate of interest (Ohlin does not develop the case of the increase in the natural rate, due to technological improvement, etc.); (b) that the populace decides to decrease its savings greatly, or vice versa; and (c) the decrease in demand for some group of goods or vice versa, the sudden increase in supply. These conditioning factors being about different income levels for various groups in the economy or make for different expectations for both entrepreneur and consumer.

By taking the position that both consumer and entrepreneurial behavior must be studied in the case of economic motivation Ohlin has put himself forth as a coalition member. Therefore, he has been placed at the close of this discussion of the overinvest-

⁴³ Ohlin has set up some of the rudimentary forms of this analysis in the League of Nations' publication, The World Economic Depression. The present material is from "Till frågan om penningteoriens uppläggning," Ekonomisk Tidskrift, XXXV (1933), 45 ff.

ment theories. In part he may be said to be representative of the credit expansion school through his treatment of the interest rate, while in another part he has taken up the cause of those oversavings theories whose thesis is that the motivation must come from the consumption side. Thus Ohlin's approach turns into a most suitable transition from the overinvestment group (and especially the credit expansionist group) to the oversavings group.

There are some concluding remarks to be made with respect to so-called overproduction. As a group the majority of the overinvestment theorists would perhaps support the generalization that the investment process results in an overproduction of capital goods; it is true that the lack-of-capital theorists will hold that the crisis is brought about by an insufficiency of capital at that point, but in that case there is still a form of overproduction of capital goods, at least in a direction, for the situation results in the unemployment of the capital so far produced, unemployment in the sense that it is not profitable to continue its use at its margin. On the other hand the oversavings group holds that there is overproduction in the sense that too many consumption goods are produced for the producer to sell his output at a profit. However, there is no clarity in definition.

One case of the latter form of overproduction has already been presented, namely, Einarsen's. His position was that increased production ran into the situation of diminishing utility and the result was that the product could not be removed from the market unless at prices which brought ruin to the producer of those products. This meaning seems to be generally accepted by the Dano-Norwegian theorists, especially by Birck, Warming, Pio and Aschehoug.

The latter writer presented in 1908 a modified form of the definition given by Einarsen in 1903. This definition is of particular interest because it brings out an element in business cycle theory theretofore unknown, or undeveloped. His thesis follows.

Each enterprise, which produces for sale, turns out products which are used or applied by persons who are engaged in other enterprises. If the expansion of one branch of production is profitable then the expansion develops into economic progress and to the advantage of all members of the economy. But this common interest between the different branches of production does not

make them equally capable of expansion. There is general competition for agents of the production and for the market. The doctrine of utility shows how with increased production of goods the utility of them falls and the prices in the market fall while all the entrepreneurs unload in an effort to sell while prices are still profitable. Under that process, however, each producer soon learns that he is not on equal footing with the others and they do not find the same market for their products. Aschehoug emphasizes that this latter condition is not in contradiction to the fact that demand is satisfied to an increasing degree, while the quantity of the means of satisfaction increases and that the value of the means thus declines.

Aschehoug, no more than Einarsen, explains how diminishing utility brings about the decline in value. Their approach to the problem would suggest that they were summing the marginal utilities of the individual members of the economy; obviously, such summations have no meaning.

Aschehoug makes a point which, however, has validity. Some products have different elasticity than others, while most goods are complementary goods. That margin, beyond which the quantity of a good cannot be increased, without the price falling to the extent that it no longer covers the cost of production, is also different for each product. That margin is also variable, changing according to the consumer's demand for products or the power to purchase them. If the quantity of production of different activities is increased without regard to the effective demand then there appears disproportionality between production and consumption.⁴⁴

It is to be inferred that this condition of ineffective demand appears as a result of the various rates of change in the economy with respect to the price structure and the agents of production. This point is not developed directly in connection with the matter of ineffective demand, but appears in a later stage in his argument. To quote:

It is suggested that there may be a possibility of smoothing out the cycle. But considering the frictions in the economy, the production for future sales on the basis of present prices, the difficulty of transfer of agents of production from those industries overproduced to those not, and the fact that the

⁴⁴Aschehoug presents these generalizations in his Social-
økonomik (Kristiania: Aschehoug, 1908), chap. xcv.

economy is progressing which leads to uncertainty, it is improbable that the fluctuations will be so 'evened out that they entirely disappear.⁴⁵

here is, indeed, the beginning of modern business cycle theory!

The definitions of overproduction by Pio, Birck, and Warming, as oversaving theorists, do not achieve this stage of development. For the most part each of those writers merely adopt the comparable definitions of Lexis, Bergman, and others of the German Socialist school.

2. The Oversavings Theories

In the evaluation of business cycle theory the writer has found it most difficult to be specific and to draw clear distinctions, especially when it is a matter of properly classifying the numerous theories. This difficulty attains no small magnitude in the case of the treatment of the oversavings theories. It is impossible to say that any one of the theorists herein to be classified as an exponent of the oversavings doctrines is strictly of that school. In reality they are eclectics to a degree, but placing the emphasis upon the consumer's behavior with respect to savings and to consumption as the impelling forces of the crisis, and all of them being primarily concerned with the cause of overproduction. All of these theorists treat with savings in a credit system and imply the presence in the economic order of forces which contribute to oscillations, approaching this latter aspect of the matter in much the same way as do the overinvestment theorists.

The Scandinavians who may with reservations be called oversaving theorists are Birck, Pio, and Warming, a trio of Danish writers. Their contributions on the subject matter appeared in 1903 as theses submitted in competition for the position of docent at the University of Copenhagen. Although all three have since that time achieved considerable prominence in European economic circles, their respective theories have been almost buried under a great outpouring of overinvestment theories, a phase of business cycle theory which did not gain great popularity in Denmark.

No one of them really develops a complete theory of the cycle, although Warming comes near to doing so more than anyone of the Scandinavians writing at that time. Unfortunately, his

⁴⁵Ibid., p. 836.

approach degenerates into a form of generalized description of the cycle for the most part. It is virtually impossible for any oversavings theorist to develop a complete theory of the cycle without bringing in other factors than the behavior of the consumer. Warming's eclecticism indicates that. In any but the most naive underconsumption or oversavings theory with which the present writer is familiar the author of it has been forced to work with the credit system, including the money and banking structure, and various phases of entrepreneurial behavior in an effort to explain why there is rhythm in the economic system. A pure oversavings or underconsumption theory can only explain why the crisis or the depression comes, and then only under rather unrealistic assumptions.

A usual analytical approach pursued by the oversavings theorist is to set up a type case in which assumptions are made that frequently carry within them the conclusion, or else advance a type case in which the conditions given do not conform with the logic of the case. Neither Birck nor Warming may be accused of either procedure, although the former engages in a type case method of analysis. It is to be understood that the type case method is here regarded as a most useful approach to economic problems; criticism is directed against the way assumptions and conditions are introduced into the method. Pio, on the other hand, does err in his assumptions; his errors will be noted in connection with his analysis of the cumulative movements.

As it has already been stated Warming starts the cumulative process by means of interjection of any number of accidental causes, technological, psychological, monetary, political, etc., hence time will not be spent on his approach at this point. It was impossible to obtain a copy of Birck's original work, so his theoretical approach must be inferred from other writings. According to his analysis there are three causes of the oscillations of the system: (a) the expansion and contraction of credit; (b) the growth in the productivity of capital is faster than the increase in the income of those members of the economy which produce the product of capital and labor; all of which results in a decline in the profit and forces therewith a condition of idle capacity.⁴⁶ In a recent monograph Birck develops a case intended

⁴⁶Cf. Ivar Hultman, review of Birck's Bidrag til en Teori om de Økonomiske Perioder, Økonomisk Tidsskrift, VIII (1906). 68 ff.

to explain the real cause of unemployment under technological progress,⁴⁷ presenting therein some of the aspects of a cycle theory which are not fully in conformity with the earlier oversavings theory. He is still concerned with the increase in productivity of capital and presents three changes in the capital structure, under the assumption of a beginning state of equilibrium (full employment of the agents of production): (a) an increase in capital (or savings) without any change in technology, (b) an unchanged capital structure as to quantity, but a new technique is introduced which, however, does not change what he calls the "automaticity," i.e., the same proportions between labor and capital are maintained, and (c) the introduction of a technique under which there is an increase in automaticity so that the same number of workers per machine are no longer needed. It is in this latter case that a cumulative movement of a depression-causing nature appears.

Pio presents an orthodox theory of oversavings, which definitely smacks of Marx. He presents the case of an increase in savings which develops into cumulative savings, resulting in depression, because of the inability of the members of the economy to buy the increased product. In some ways, however, there may be said to be a relationship between the overinvestment theories and his theory to the degree in which both develop certain conditions of capital cumulation. The conclusions reached, however, are different for reasons of different assumptions as to the relationship between the capital growth and labor.

D. Exogenous Theories

Into this category falls those theories "which go outside of the economic system for their causes of the cycle." In other words, they may be called the non-economic theories. How far classification may go in distinguishing between economic and non-economic is another matter. The ambit of assumptions may be so extended as to include almost every impact upon the economic order as economic. It was decided in this case to leave "natural forces" outside of that province.

Petander.--Petander attempts to show "that it is agricul-

⁴⁷Technischer Fortschritt und Überproduktion (Jena: Fischer, 1927).

ture which is the primary cause of the appearance of oscillation of industrial character." In other words, it is the changing condition within agriculture, in particular the marketing of a bountiful harvest, which becomes the incentive to a cumulative movement. Furthermore, basic to the fluctuation in good crops are the variations in weather, presumably induced by the sunspots.⁴⁸

There is no doubt that at various times in the past the upswing in the business cycle has been associated with a good harvest, and it may be possible to argue that in some cases a good harvest under certain conditions may have proven a direct incentive for a cumulative movement which was already in preparation. (Hardy, Moulton, Jevons, Moore, Dietzel, and others find some causal relationship existing between good harvests and cyclical improvements.)

Of interest is Wicksell's criticism of this theory.

Even if the parallelism (between the harvest and the upswing) could be regarded as quite probable, there is still nothing said with respect to an actual condition of causality. . . . Petander is unable to derive another explanation other than that the fluctuations in the harvests of the world economy are definitely dependent upon purely natural causes, i.e., the meteorological conditions. This conclusion must be deemed a bit unfounded.⁴⁹

Johan Akerman.--Nevertheless, Johan Akerman places considerable weight upon the argument advanced by Petander as well as upon findings of Lenoir, Moore, and Kuznets, in the support of his theory of the inception of the business cycle. He does not, however, find the causal relationship between the inception of the cycle and the good harvest that some of these writers mention do. In fact, he maintains that since 1897 harvests have contributed less and less to cyclical improvements, while the agricultural production has become dependent more and more upon the industrial cycle.

It is not the variation in the size of the harvest which nowadays is of significance for business cycle improvement, but is rather "the harvest, i.e., the harvest for each year independent of its variations in size, which exercises an important influence upon the course of the cycle, and this in connection with the seasonal variations in the capital market . . . the increase

⁴⁸Goda och dåliga tider.

⁴⁹Review of Petander's Goda och dåliga tider, op. cit., p. 66.

seasonal demand for credit calls forth an automatic redistribution of the national income to the benefit of future goods, i.e., an increase in the savings quotient."⁵⁰ Akerman, as a lack-of-capital theorist, thus finds support for his theory that the decline in the savings quotient is an inducement to a cyclical upswing.

This phase of business cycle theory bears consideration. It would be difficult to find support for it on pure, theoretical grounds, however, empirical observation of the savings element would possibly prove significant in its evaluation. Akerman does not attempt an indirect statistical proof of this hypothesis.

Gjermoe.--Gjermoe has made a statistical study of the relationship between the seasonal and conjunctural variations. By the application of certain statistical techniques to indexes of unemployment, he finds the following relationships:

a. The seasonal variation changes strength with the conjuncture. It is more pronounced in poor than in good years.

b. The strength of the seasonal seems to be related to the conjunctural levels.⁵¹

In the data which he has examined he finds, however, no such definite relationships as suggested by Akerman. It may be possible that a seasonal movement may have the qualities of an impulse factor if the conditions for a conjunctural upswing are ripe.

As a conclusion to this chapter it may be of interest to turn back for the moment to the controversial distinction between "intrinsic value" and "commanded value," a distinction which was at issue in the value theories of Ricardo and Malthus respectively. "Overproduction" as a characteristic of the business cycle brings the matter again to the fore.

As it has already been noted, hardly a writer in the Scandinavian group escapes the accusation of being an "overproductionist" in some form or other, that is, there seems to be generally contended that the business cycle is a phenomenon of "overproduction" of capital goods or consumption goods in the sense that these goods cannot be sold at a price. Of this group there is only one writer, namely, Davidson, who falls back upon the intrinsic value theory of Ricardo in his explanation of the failure of

⁵⁰Om det økonomiske livets rytme, pp. 189-94.

⁵¹E. Gjermoe, "Aarstidsbevaegelse og Konjunkturbevaegelser," Statsøkonomisk Tidsskrift, LI (1931), 45 ff.

the price in the market to move the goods produced. He becomes chiefly concerned with speculation as a characteristic of the cycle, under which the "market value" departs from the "intrinsic value" of the goods. Most of the other writers, it may be said, use some elements of the "commanded value" theory of Malthus in their treatment of the revenue-cost difference, namely, in the sense that they, in one way or the other, do apprehend the element that costs are no longer a variable in price formation, once the good is produced. The various theorists may be at difference as to how to apply the term. "Overproduction," it would seem, simply becomes a situation which is explained by the different theories --each theorist holding to his own solution. Nevertheless, in but a few cases is there anything other than a vague understanding of the meanings of a "commanded value" theory. Most of the writers have been hitting around the target, as it were, while but one or two have come near the mark.

What is significant with respect to the "commanded value" theory is that it does make possible an understanding of price formation in an economy of frictions and inertias. Most of us are acquainted, for example, with the cycle theory of Tougan-Baranowsky. His is the classical comparison of a barter economy with a money-exchange economy. In the barter economy if the supply of one good, grain, to use his illustration, increases relative to cloth then, he argues, the producers of cloth will find their product commanding more grain than before, while the producers of grain will find their product commanding less cloth than before. There will be, however, no case of general overproduction, because the relative rise in the value of one product will be offset by a decline in the value of the other, and adjustment will take place in production, with a shift from wheat production to more cloth production --or presumably to the production of other goods.

However, in a money economy the story is different. If the above situation is revised to cover the exchange of goods for money, instead of for each other, Tougan argues, there will be overproduction of the kind seen in the business cycle of a capitalistic world. When the supply of grain increases, relatively speaking, then it will fall in price, exchanging thereby for less money. Moreover, the price of cloth will fall, too, because the producers of grain will not be able to buy as much cloth as formerly. That is, "The prices of the goods change, not in oppo-

site directions but in one and the same direction." With the appearance of a "surplus" in one line of production and the accompanying price decline, the effective demand of those producers is reduced. Other producers producing the regular amounts of goods are forced to sell their goods for less because the effective demand of the first group is less, and, therefore, there appears, according to Tougan, a condition of general overproduction with a fall of prices which becomes general, all because in the money economy, goods exchange first for money, and the quantity of money received becomes less under the circumstances stated.

Without pointing out the numerous errors existing in this line of reasoning it can be argued that Tougan-Baranowsky, too, saw the target, but did not place his shots. What must be emphasized is that he sensed the factors of inertia and friction without coming to a full realization of their importance for his theory of the cycle.

From some standpoints there may be reason for distinguishing between a barter economy and a money exchange economy, but this distinction hardly lends to a suitable theory of the business cycle. The chief characteristic of our capitalistic form of economic order is growth; i.e., there is a fairly constant accumulation of capital which along with growth of population is the chief contributor to economic change. Were there no inflexibilities in the economy, it is most probable that growth of population and capital could take place without much effect upon the relative stability of the revenue-cost relationship. Introduce inflexibility and the factors of change give rise to movements not necessarily of the same rate, but possibly in the same direction. A money economy with perfect flexibility is surely most different from the money economy as we know it. Were there no friction present in our economy, the velocity of money could perhaps become infinite, and a stable value of money would thus be inconceivable. what is striking about the present economic order is the presence of frictions and inertias which on the one hand contribute to a degree of monetary stability and on the other hand at certain times, because of the variations in the quantity of money, contribute to monetary instability. This statement may appear paradoxical in meaning, but it is hoped that further consideration of the business cycle problem will lead to an explanation of the meaning implied.

What most of the writers on cycle theory are grappling for seems to be an explanation of what changing element, money, capital, or the like, contribute to so forceful a general movement in one direction as to bring about a complete dislocation of the economic system and revenue-cost relationships in the short run. Most of the theories of the business cycle are thus concerned. Whether they approach their explanations from the viewpoint of technology and change, or the exchange mechanism and change, or the credit and money mechanism and change, their point of chief emphasis is that some one factor contributes to a cumulative movement away from what is an equality between, presumably, price and cost, without sensing then that each and every one of them is really not so much concerned with change itself as with failure of the system to adopt itself to the change which has appeared.

No one, for example, looks upon growth of population any more as being a force contributing to cumulative displacement of the economy. As a force the increase in population apparently is not regarded as an element to which the economy cannot adjust itself without throwing itself out of gear. Rather, there must be something else which produces a swifter reaction upon the system so that adjustment to equilibrium for the time being ceases because of the shock with the reaction taking place all in one spot, as it were, the forces rushing all in the same direction and not equalizing each other.

It must not be construed that all theories are equally clear or agreed on this matter of concentration of forces. However, the recent developments in business cycle theory point to a growing apprehension of the significance of cumulation under the conditions of economic friction and inertia. To a considerable extent the Scandinavians must be given credit for this change for the better in business cycle thought.

CHAPTER XI

CUMULATION AND RHYTHM

Formalistic price theory in order to develop an adequate doctrine of price formation must work with given conditions and with the assumptions of perfect flexibility and perfect knowledge. The assumption of ceteris paribus is as necessary an adjunct to pure economic theory as it is to the pure theory of physics or of the pure theory of chemistry. On the other hand, business cycle theory must treat with change in the given conditions and it must drop the assumptions of perfect flexibility and perfect knowledge (the two may be synonymous), while the ceteris paribus set up by cycle methodology takes on different aspects from those of pure economic theory. In the price formation process under "real" conditions some supply factor or some demand factor (the independent variables) and/or both may bring a price variation from equilibrium. A new equilibrium position may be formed, a brief penumbra of oscillations may take place and the old position is restored, or a greater penumbra of oscillations may set in so that for a considerable time there appears no tendency to a return to equilibrium.¹ It is the problem of business cycle theory to study the nature of the latter variations; these latter variations can only appear, it is contended, when the factors abstracted, as in pure theory, are present.

More recent cycle theory advances the contention that it is the frictional element, held constant in pure theory, which is the primary disequilibrium factor in contributing to the cyclical movement. This contention contains more than a grain of truth, but there still are other factors to be considered. As has been previously stated,² a theory which falls back solely upon the friction factor leads to unwarranted conclusions; even though a

¹The term "tendency" is here used in the sense that there seems to be no evidence of a return to equilibrium.

²See chap. iii et seq. (Chap. iii is not a part of this "essential portion." The complete dissertation is in the University of Chicago Libraries.)

high degree of friction may be present in the economy, it need not necessarily contribute to cyclical movements, for friction by itself does not account for the oscillations in the economy; in addition there must be present uncertainty or imperfect knowledge. There are still other factors which make for instability of the economic system. In part these factors are correlative to friction, while in another sense they are independent of friction. Those factors are cost, diminishing returns, elasticity of demand and of supply. The first two factors determine how far the entrepreneur may go in the expansion of plant and equipment, i.e., the "carrying through of new combinations of the agents of production"; in the modern, progressive economy these factors are to a considerable extent made inoperative, except in the case of the single investment, through the great rate of capital accumulation (which includes knowledge), i.e., change in given conditions especially in view of the fact that there is a relatively less degree of diminishing return with respect to the addition of capital to the other agents; while increasing cost is slow to set in and the amount of goods supplied may be governed in the short by numerous elements aside from costs. As Harrod states, it is conceivable that in the modern economy there is a condition of diminishing elasticity of demand, i.e., "as output as a whole increases and individuals become more affluent, their sensitiveness to price differences declines."³ Here is an element which may contribute to either stability or instability in the economy. Likewise the ineffectiveness of the operation of diminishing returns and of increasing costs may both have the latter effect of rendering the economy instable to the extent that the brakes upon expansion are slow to be applied. Thus there may be good reason to hold, as does Wicksell and others, that the economy is inherently subject to fluctuations, or is inherently instable, so that impacts upon equilibrium will tend to throw the system into great penumbras of oscillation, resulting in the maladjustments called the business cycle.

It is not contended thereby that it is the capital accumulation process which leads to oscillations. It is only said that capital is less subject to diminishing returns than are the other

³R. F. Harrod, The Trade Cycle (Oxford: Oxford University Press, 1936), p. 21.

agents of production and therefore allows for rapid growths of the economy or portions of the economy. To be sure some theorists hold that the cycle is primarily a phenomenon of rapid capital accumulation, that is especially, those influenced by Cassel, e.g., Johan Akerman, Gustav Akerman, and others of the Scandinavian school. However, it cannot be argued that it is the capital accumulation process itself which leads to the oscillations; rather it is an auxiliary or contributing element, in that it allows for change in the given conditions, quantitative as well as qualitative. It is believable that capital accumulation under a condition of same rates of change for all agents of production and for all prices, would take place evenly. If that is true then, strictly speaking, it may not be held that the cycle is purely a capital accumulation phenomenon as the theorists mentioned may contend and as others may contend.

In 1904 Gustav Cassel stressed the possibility of a decline in the force and amplitude of the conjuncture and predicted that the cycle will eventually even out. Cassel tied up the variations in capital accumulation to the rate of interest and, hence, the rhythm element becomes for him the interest rate and, of course, the associated "capital waiting" and credit. "There was no tie-up with variations in bank reserves." Cassel, as most of the theorists of that earlier day, had no understanding of the nature of the economic friction. His approach was that of the usual static analysis but with an emphasis upon the interest rate as a cost element in the entrepreneurial commitments. In the sense to be developed herein, the emphasis was placed upon an impulse element, e.g., a favorable price-cost situation and, for most of the theorists, a cumulative movement upward became generated under the impact of the impulse factor, but none of them showed why such a cumulative development took place. What was usually presented was a description of the movement upward, but no causation was presented. Cassel has been no different up until more recent writings of his.

Cassel is not alone in his approach. The majority of the theorists failed to recognize the friction factor especially, although they did, on occasion, give some thought to the ineffectiveness of the stabilizing forces of the economy. In fact, the only exceptions were some of the German theorists.

It is curious to note that the Socialistic and the German

Socialist-historical schools of thought were more apprehensive of the nature of economic inflexibility than were the capitalistic writers. Karl Marx has taken a position opposite to that of Cassel. For him, the business cycle is strictly a capitalistic phenomenon and, therefore, with the increasing separation of the worker from the ownership of the enterprise and with the growth of the wage-earning class, the cycle becomes a "natural and necessary condition" of the capitalistic economic system. It is not hereby implied that Marx and later adherents of the socialistic school, Lederer, in particular, have through their theoretical position with respect to the labor class come to a definite statement of a rhythm phenomenon. What Lederer has argued is, e.g., that since labor no longer owns its tools and workroom, the moment entrepreneurial commitments are found misdirected, then labor is laid off. In this, labor is far different from the farmer who continues to work his land, even though prices of grain fall considerably. What is implied here is the inability of labor to adjust itself. In this connection Lederer develops a lag theory of wages. Herein lies an element, then, of economic inflexibility. Although their argument is not carried by the Socialists to this latter point (their failure to understand the theory of marginal productivity preventing), they are thus far more apprehensive of the issues to be faced. While the capitalistic theorists become primarily concerned with the impulse elements, the Socialists through their concern with institutions placed emphasis upon the inability of the capitalistic system to carry the burden of its development. It is this latter viewpoint which may come to have indirect value for a theory of the cycle.

The term "cumulation," the title of this section on causality, is used in a very general sense to encompass not only the statement of the Wicksellian cumulative movement, but also the psychological elements which may enter into the swing away from equilibrium. Consideration will therefore be given to both frictional and psychological factors.

To turn then to the question with respect to why cumulative movements away from equilibrium take place once change appears, a second question may be added: why do these wavelike movements possess a certain degree of regularity? (It is of interest to observe what Jørgen Pedersen does not consider the first question

"problematisch," rather it is the second which demands attention.)

The earliest attempt in Scandinavian theory to examine the rhythmical nature of the cycle was that of M. B. Hamilton,⁴ who in 1905 wrote an article in criticism of Cassel's theory developed in the preceding year. His major criticism of Cassel was, namely, that he did not show how the cycles derived the amplitude which was then characteristic of them. His contention was that if the factors, interest and credit, were the significant causative elements in the cycle, then it could only be true that the departure from equilibrium would even out. There must be some other element present to make for the cyclical swings. Having stated this criticism, he proceeds to illustrate the possibility of a cumulative movement upward without the intervention of credit and savings. His argument follows. First of all, he admits the importance of the fluctuations in the production of durable goods, thereby agreeing with Cassel's chief point. But there is still another significant element; it is difficult to judge or evaluate "the normal strength of consumption." By consumption he has reference to both perishable and durable goods.

This difficulty grows immensely during intense situations (meaning: during increased rates of growth of the economy). Even he who directs his attention to the study of the economic situations, can hardly attain to any other than a rather vague and uncertain statement with respect to the normal consumption of a whole country or of the world markets at a definite point in time. The greater number of business men do not give a single thought to such a study. They merely direct their purchases according to the supply in the shop of the preceding day. Small wonder, then, that the upswing movement feeds itself and that the reaction places the blame upon its own shoulders!

The true cause of the cycle lies then therein that a movement once initiated, either upward or downward, has a constant tendency for various reasons to grow in intensity. . . . It is in this condition that the explanation of the various forms of fluctuations in the economic system should be sought, even the most powerful of them.⁵

Thus Hamilton falls back upon the element of uncertainty and of resulting miscalculations in the attempt to explain the cumulative movement. Unfortunately he did not sense the real importance of inflexibility for his approach and, what is more un-

⁴"Orsaken til goda och dåliga tider," Ekonomisk Tidskrift, VI (1904), 171 ff.

⁵Ibid., pp. 181-83. Hamilton does not show how the cumulative movement upward may develop without an increase in savings or an expansion of bank deposits.

fortunate, it was not until recently that the Swedes took up where he left off.

It is likewise the case with the Norwegian, Aschehoug. It was mentioned in the preceding chapter that he saw the need for the introduction of friction into the assumption of cycle theory; but like Hamilton he merely suggested its importance, then did nothing to develop its application to the analysis of the cumulative movement. Cycle theory reached this state in Scandinavia, there to remain until the appearance of Myrdal's treatise on risk in 1927. That date truly marks the turning point in cycle thought, for Myrdal pointed the way to a reconstruction of the Wicksellian cumulative process, which previously had been chiefly descriptive in its treatment of the movement away from equilibrium.

Prior to this quite recent development, the majority of attempts to re-create a pure theory of the oscillatory characteristics leaned heavily upon mechanistic devices. Such devices were, for example (a) the increase and decrease in bank reserves, allowing for expansion or contraction of credit to the entrepreneur; (b) the acceleration principle stating the multiplicative effect which an increase in the demand for consumption goods may have upon the production of capital goods; (c) the less mechanistic notion that a new product may bring about a group of satellite industries causing thereby cumulation of capital; and others. All of these and still more concepts of acceleration of one kind or other are, to be sure, contributing to the process, but whether or not they in themselves bring cumulation is another thing, for they do not necessarily explain how disequilibrium, once initiated, generates into a continuous movement which may for some time defy all stabilizing forces. In an economic system in which all rates of change of prices were the same, the expansion of bank deposits would not generate a cumulative movement, while the Clarksian theory of acceleration has validity only for certain phases of the cycle and, then, only under the assumption of uncertainty and inflexibility. No one of these mechanical relationships provides an adequate explanation of a replicate movement; rather they merely yield an explanation of the rapid movement of forces during certain phases of the cycle.

The following analysis of the Scandinavian theories will, it is hoped, establish some of these contentions. The previous order of classes of theories is followed so as to facilitate ex-

position.

A. Technology Theories

As it has been stated in the preceding chapter, only two or three of the theorists who set up a disequilibrium movement under the assumption of a change in technology, proceed therefrom to derive a theory of the cycle. For the majority of the writers the technological change is but an initiating cause while the cause of periodicity must be sought for elsewhere. Even those who continue to work with some phase of technology must introduce other causative elements. The result is that a number of theorists who were earlier considered under this section must be transferred to other categories. Petander, Wicksell, Johan Akerman, Pedersen, and Davidson are thus automatically removed from the picture for the time being.

1. Inventions, Discoveries, and Improvements in Technology

Cassel.--In his first attack upon cycle theory, already referred to, Cassel places almost entire emphasis upon the phenomenon which he calls "the formation of capital." He says

... every crisis is preceded by an exceptional increase in the formation of capital. During the following period of depression the capital formation is relatively low. This without doubt is what a study of good and bad times really teaches us.⁶

Hence it may be presumed that the cumulative movement away from equilibrium is the function of the rapid increase in the production of capital goods, for capital formation means naught else than "the creation of concrete capital." New inventions are introduced and taken up by the economy. The railroad, e.g., is extended throughout a nation and the rapid accumulation of capital begins, and forewith a great program of growth of the economy which leads eventually to the crisis. A movement in one industry has secondary effects in others. The length of the business cycle upswing becomes a function of the time required to produce the capital goods which are the main element in the cumulative movement.

In his 1923 edition of The Theory of Social Economy, the

⁶"Goda och dåliga tider," op. cit., p. 60.

same explanation of the cause of the cumulative movement away from equilibrium is advanced. It is the increase in capital goods production which marks the upswing and their decrease which brings the depression.⁷ On the other hand, consumption goods production does not affect the economy in a manner to induce cycles. So important, in fact, does Cassel consider the fluctuations in the production of capital, that it may, if his theory were less closely examined, be concluded that this is advocated by him as the sole cause. But such a conclusion would be entirely erroneous, for he definitely ties up his primary cause with the variations in the rate of interest. Presumably, the fluctuations in the rate of interest are tied up with the amount of savings, but Cassel is not very clear about this point. In this article of 1904⁸ he criticises Spiethoff for assuming that savings takes place during the depression and thus funds accumulate to lie idle. Cassel holds that this cannot be the case, that the increase in savings comes in the prosperity period with the increase in profits. What actually happens during the depression is an accumulation of reserves in the form of "great unused production capacity," e.g., unemployed labor and "flexible capital," meaning thereby "circulating capital." At another point,⁹ he makes the statement that a rise in the rate of interest means that a decline of "loanable capital" is taking place. It is not stated whether he has reference to savings or to "circulating capital."

The significant point for present purposes, however, is that Cassel in order to make plausible his theory of fluctuations in capital production, is forced to support it by a theory of variations in the rate of interest. Here is direct evidence of the inadequacy of a mechanistic theory of cumulation; and one mechanistic theory is used to support another. It would not be possible to build up such a theory as he does on the basis of variations in capital goods production alone for, then, he would reveal naught but his own theory of the uniformly progressive economy, whereby cycles are not to be explained and are set aside.

In his 1932 edition of his Theory of Social Economy, Cassel

⁷Pp. 520-23.

⁸"Goda och dåliga tider," op. cit., pp. 61-64.

⁹Ibid., p. 68.

becomes more specific about the nature of the cumulative process. He still makes it a primary function of the increase of capital goods production, but there are attendant circumstances. ". . . cyclical fluctuations of trade must be regarded as a result of the reciprocal action of the enterprise of businessmen and the great regulative factors of the social economy which have their roots in economic society--the prices of materials, wages and the rate of interest."¹⁰ On the basis of these factors Cassel sets up a "principle of action and reaction." A low rate of interest coupled with low prices of raw materials, low wages and other costs induces action upward. A high rate of interest, low prices of raw materials, and low wages, bring reaction. With the exception of the rate of interest he does not state what determines whether these factors are high or low in price. Presumably, interest is high or low relative to the equilibrium rate, which has been defined in an earlier chapter. In this latter connection, he writes, "The fluctuations of trade cycles are, in general, somewhat accentuated by the action of the banks. . . ."¹¹

Cassel devotes considerable space to the presentation of empirical data describing the cumulative movement and other phases of the cycle, but he does not present anything which may be considered adequate from a theoretical standpoint. His principle of action and reaction says nothing other than what goes up must come down. There is, however, one theoretical aspect of the cumulative movement which is of definite interest. He provides a theory of how the cumulative movement upward may gather force; it is, however, quite inadequate. The labor needed during the boom, according to him, is almost all gotten from agriculture, and it is this attraction of manufacturing industry for agricultural labor which permits to a considerable extent the expansion of plant and equipment. Although there may be empirical evidence to the fact that there is a great transition of labor from industry to industry, this element is far from sufficient explanation of the force which develops behind the movement upward. Such transitions are but secondary aspects of the cumulative forces.

In his The Theory of Social Economy there is growing evidence to the fact that Cassel is coming to lean more and more towards a monetary theory of the cycle. Hence further discussion

¹⁰See pp. 639-49.

¹¹Ibid., p. 642.

of his theory will be deferred to the section on credit theories.

Gustav Akerman.--In connection with his theory of structural change Akerman develops an interesting aspect of the cumulative movement.

Akerman presents a simplified numerical illustration of structural maladjustment. He assumes a condition of a uniformly progressive economy where the annual growth is three and one-third per cent. For the automobile industry the production is 30 (000's omitted) units per annum for the first year (I) considered. Normal growth for a period of years I to V would bring the per annum production up to 35 units. Assume, however, a technological improvement which greatly reduces costs of production. Now under the price decline resulting, there is a great increase in sales. Now production at the end of year V is 59 units instead of 35. This increase in production is due in part to the increased new sales and in part to replacement sales, increased new sales calling for an increase of 10 units per annum in V, and replacement for 34 units in the same year. The actual increases in new sales for the five years, respectively, are 1, 3, 6, 9, and 10. The important element is thus the increase in new sales, and not in replacement sales, although replacement will make for the greater amount of sales.

The anticipation of the entrepreneurs under the reduced costs of production as to these future sales calls for a vast expansion of plant and equipment for both the automobile and auxiliary industries. A cumulative movement takes place which may or may not take on great proportions dependent upon certain conditions. The first is the extent of the price reduction (and presumably the shape of the demand curve, although this aspect is not investigated by Akerman). The expansion of sales is a partial function of price reduction. The second condition states the nature of competition. If competition becomes keen under the new possibilities then expansion will be greatly accelerated. (It is only under a great acceleration of production that the technological savings can be passed on to buyers.)¹²

It is Akerman's view that these structural displacements (as he calls them) can be carried through either rapidly or slowly. When carried through rapidly they may result in rather wide-

¹²"Om konjunkturväxlingarnas nödvändighet och grundorsak," op. cit., pp. 14-27.

spread mal-location of the agents of production. How this mal-location of the agents takes place Akerman's theory really does not establish. In part he does derive a rational explanation of why the cumulative movement gathers force, especially in connection with the second condition mentioned above, namely, that competition may force a wide adoption of the new production process calling thus for a general expansion throughout the particular branch of industry. But there must be auxiliary factors such as imperfect knowledge and inflexibility, but these elements do not enter into his theoretical attack. Nor does Akerman state what the developments in the capital market will be.

The structural displacement approach to a business cycle theory, either assumes that the development in one industry must be sufficiently forceful to generate into a widespread situation of maladjustment, or else it must explain how such a horizontal investment process will become extensive. As he indicates, Akerman does not treat with the more generalized aspects of a business cycle theory, nevertheless he finds in his approach a fundamental attack upon the causes of business cycles; hence, his theory can only be adjudged a part of a complete cycle theory.

Akerman's theory provides, however, the basis for a criticism of the underconsumption theory advanced by H. G. Moulton. This theory places the blame for the cycle and the crisis upon the failure of producers to pass on to the consumer the savings of cost reductions due to technological improvements. It is difficult to establish the reasoning process whereby such a conclusion has been reached; Moulton must have assumed that the cost reductions were carried through without an increase in production. Such an assumption has meaning or validity only under very limited conditions. In most cases, in reality, it can be argued that cost reductions which should appear under the introduction of technological improvements, can only really happen when production is increased and therewith sales. This would apply in particular to external economics. Hence, in order to bring about an increase in production, prices must be reduced and, most likely, they will be reduced to a point somewhere within reach of cost of production, oligopoly notwithstanding, for oligopoly means little when it comes to technical change. Firms operating under a condition of oligopoly immediately become competitive in the full sense of the word when one or a few firms introduce a new improvement of im-

portance for cost reduction.

2. Superiority of Large-Scale Production

Brock.--As it has been stated in the last chapter, the assumption basic to Brock's theory is that production on the large scale is more productive (i.e., the marginal product may be increased by the introduction of large-scale production) than on a small scale. In order for a business to survive under competition, the entrepreneur is forced to expand plant and does so by borrowing. Assisted by credit (an elastic currency or bank deposits, presumably) the entrepreneurs expand production. Wages tend to rise and as a reaction against this rise, there takes place a substitution of capital for labor. Brock suggests that some would object that an immediate reaction against the latter would also take place in the form of an increase in the interest rate and, hence, the shift to a longer roundaboutness of production would soon come to a stop. However, empirical data demonstrates that the wage rise first suggested does not develop with a great rate of speed, i.e., during the upswing (hausse) the real wages decline with a strong consistency for some time during the period of cumulation. This brings about an increased profit on capital and the entrepreneurs are thus motivated to continue their expansion programs.¹³ Even under full employment of labor, it will be possible to expand because the capital goods industries being profitable they will be in a position to take labor away from the less profitable consumption goods industries.

Increased demand for capital goods calls forth an ever-increasing demand for labor, wages continue to rise, and eventually this rise will assume great dimensions.¹⁴ With the increase of wages and hence of the purchasing power of a great part of the populace and with the lowered supply of such goods as the movement spreads, there comes an increased demand for consumption goods and, therewith, an increase in their production. The forces of cumulation thus tend to become general. Hence it is further necessary to introduce new machines and plants, despite rising wages. "We thus see that to explain the appearance of the hausse and therewith the whole industrial cycle, we need not seek for any accidental events, but that it is easy enough to explain it from the

¹³Op. cit., pp. 210-12.

¹⁴Ibid., pp. 218-19.

inner organization of the economic community."¹⁵

In this approach to the theory of the business cycle, there is found one of the earliest attempts to derive a theory of the cumulative movement without resorting to generalized description. Brock has developed the first lag theory to appear in Scandinavian and it may be said to be the forerunner of the Hayekian monetary theory of the cycle. Brock would object strenuously to being so classified but, nevertheless, the rudiments--fairly well presented--are fully in evidence. It must be stated that Brock does not really apprehend the significance of his approach. The expansion process which he presents would not be possible of attainment by the entrepreneurs were it not for an elastic credit system; this Brock realizes in his subconscious mind, but fails to develop the idea in so many words. The falling real wage is another way of treating the so-called Forced Savings notion (Hayek).

Still there is lacking the theoretical fullness of the more realistic theory of the cycle. The lag theory is but a "static" way of developing such a theory; there must be introduced the friction and inertia factors to bring completeness to Brock's theory. However, in the year of 1909 he has gone farther than any of his predecessors.

It must further be noted that the portion of the theory which Brock contends explains the cyclical nature of the Economy, namely, the competitive striving under large-scale enterprise, is really to be regarded as impulse theory. It is already stated (see last chapter) that herein lies an excellent explanation of why a new discovery may receive general acceptance. This is a major point which Brock unfortunately overlooks, for therein lies the beginning of far more substantial over-investment theory than any of the then contemporary doctrines, and even some of the later attacks upon the general problem, the truly rhythmic element, as far as it goes, is the lag aspect of wages and other prices (as indicated). This again Brock really fails to understand.

It may be said in conclusion that Brock's theory has all the elements of a monetary over-investment theory, and his theory is thus not so far removed from the Wicksellian approach of which he has been unduly critical, especially with respect to the "profit

¹⁵Ibid., p. 222.

rate" as "natural rate of interest," for he himself goes out from a tacit assumption of a fairly constant bank rate or else a more rapidly rising profit rate as against a relatively less rising bank rates.

3. Capital Replacement

Schönheyder.--As has already been noted, Schönheyder first presented this theory and Frisch and Johan Åkerman took it up in turn. According to it, the time movement of the cycle has a tendency to adhere to the durability of the most important capital goods in the production process, and hence it is the wear of and replacement of these goods which makes for cyclical movement.

The only comment that need be made is that replacement of worn-out capital goods may serve as an impulse factor, but it would indeed be difficult to find any relationship between cumulation away from equilibrium and the durability of capital goods. It is only the increment in the capital goods structure which may have accelerating effects upon the economy and, then, only in connection with other circumstances. The time required to produce the new capital goods (Cassel) may determine to some extent the duration of the cumulative movement, but their durability provides no such an explanation.

B. Theories of the Errors of the Exchange Process

In this modern capitalistic society where the action of the individual is not positively motivated but really is primarily governed by the volition of the individual, it would be impossible to treat with economic phenomena without touching upon the subjective or psychological. Those who would make economics a purely positivistic approach to related social problems are simply closing their minds to this fact. It is, therefore, most curious why modern business cycle theorists have been extremely reluctant to apply in their analysis the various aspects of the psychological theories. What makes the matter even more puzzling is that the psychological approach to the cycle problem brings into the foreground such characteristics of the cycle as make for cumulation far more effectively than the more objective modes of analysis. Indeed, it is impossible to explain the forces of cumulation without some assumption, implicit or explicit, as to the

subjective behavior of individual members of economic society, especially the entrepreneurs. In fact, it may be an error to separate from the other theories a group of theories and then label them theories of error and miscalculation, for what theory does not, properly speaking, evidence some elements of error and miscalculation!

Brock.--This writer loses a good bet when he criticizes Brentano for having derived a wholly "psychological theory" and when he concludes that speculation leads only to a "partial crises." Speculation, he contends, affects principally single industries--being horizontally developed--and therefore not general business activity. However, he makes the following admission which with considerable care he leaves out of his own theory. The speculative element arising from the "impenetrability of the great market of modern society" is of great importance as "an accessory factor in the aggregation of the general crisis."¹⁶ hence, if the economy is already in a movement away from equilibrium, all calculations with respect to future commitments become increasingly difficult. Hence, it is easy to err in allocating the capital of the economy to various branches of production.

Herein is found, indeed, an important aspect of "speculation." Why Brock fails to make use of it in his own theory is indeed most puzzling.

Johan Akerman.--Akerman, whose eclecticism is very disconcerting for anyone attempting to pigeon-hole Akerman's various attacks upon the cycle theory, has recognized fully the importance of the subjective elements of the cycle.

In treating with this phase of theory he establishes a definite relationship between "the psychological factor" and periodicity, subscribing thereby to Myrdal's position that the "risk evaluation of the entrepreneurs viewed universally, is one of those quantitative elements which as the cycle lend themselves to oscillation" for no other reason than ". . . that the entrepreneurs give effect to different expectations during different phases of the cycle."¹⁷ In adopting some of the major elements

¹⁶ Ibid., p. 162.

¹⁷ See Akerman's Om det ekonomiska livets rytmik, pp. 147-48. Akerman has reference to Myrdal's Prisbildningsproblemet och föränderligheten. Cf. pp. 186-87.

of the Myrdalian approach, Akerman ties up what he terms "felin-vesteringen" (literally translated as mis-investment; there is the equivalent in German: Fel-investition) with the psychological factor. Investment progresses in conjunction with time, savings, and the psychological factor, and the latter "stands in such an intimate relationship with progression that it in reality may be considered one of its factors." It then develops that there are two kinds of psychological factors: the reversing factor and the incremental factor. The former puts in appearance at the "critical moments" of the cycle, being "an automatically intervening variable which to a certain degree breaks down the established movement. The reversal in the cycle is closely associated with the subjective because "it is the evaluation of the present and future, not the objective factors nor the underlying elements, which at these critical periods determine the direction [of the cycle]." The incremental or growth (psychologically predetermined) factor is present throughout the whole of the cyclical oscillations, and it becomes an important accelerating element especially in the cumulative movements. In fact, Akerman would do better to call it the accelerating factor. Upon it he seems to place the burden of the explanation of some of the major aspects of the rhythmical character of the economy, although he postulates that there must be present other elements before the psychological reactions or cumulations come into being. It is, however, this writer's contention that Akerman would not have a leg upon which to stand in explaining the rhythmical character of the cycle were it not for the introduction into his theory of these psychological factors.

The cycle is derived as follows:

$Y = F(t, u, v, q, s, i, r)$, where t is time, u is the growth in population, v is the capacity of the production media, q is the amount of savings, s is the seasonal factor, i is the psychological growth factor, and r is the time-length of construction. Of these factors only i can induce periodicity, contrary to Akerman's position with respect to t , q , and r . The latter factor, r , may determine to some extent the amplitude, but it will not contribute directly to periodicity. q is, strictly speaking, a conditioning factor and is according to Keynes a function itself,

of the propensity to save (subjectively activated).¹⁸

Davidson.--It is "illoyal" speculation which contributes frequently to major cumulative displacements of economic forces. How it does, says Davidson, is not exactly known.

The upswing in the stock market (e.g.) is determined (conditioned) by the illoyal speculation. It is in the nature of the thing that illoyal speculation is constantly in operation; and the different phases of this kind of speculation should hence be of approximately the same length for separate cycles and should therefore shape the oscillations.¹⁹

Davidson thus regards this form of speculation as contributing to oscillations, in the sense that there is a group of individuals who enter the market when there is opportunity for driving prices out of line with the "intrinsic values." The opportunity comes in certain phases of the cycle, especially in the upswing (hausse) and thus illoyal speculation develops into an important form of acceleration of the economic variations.

There is no explanation by Davidson as to what individuals institute this form of speculation. If he has in mind manipulation then the term "illoyal speculation" has no meaning, for it is impossible for any group of individuals--e.g., professional speculators--to push the whole market out of line. If he has in mind the public which steps in when all looks rosy and buys in anticipation of speculative gains, then he does provide to some extent an explanation of price movements for certain kinds of commodities and for shares. (The extended bull market of 1927-1929 in America, he finds, was due to some form of "illegal speculation" coupled with the mistaken monetary policy of the Federal Reserve System). Davidson, himself, is not too certain that there is reason for considering "illoyal speculation" as a theoretically established phenomenon. He furthermore, differentiates between speculative and psychological aspects of the cycle, so that it may be stated that the speculation which he refers to is not necessarily of a psychological nature; to that extent he must have in mind some form of "manipulated speculation"; if he does, then his theory has small value.

¹⁸These aspects of Akerman's theory are gleaned from Om det ekonomiska livets rytmik, pp. 174-78, and pp. 222-26, and from Konjunkturteoretiska problem, pp. 28-35.

¹⁹"Den ekonomiskakrisernas problem," Ekonomisk Tidskrift, XXXII (1930), 205 ff.

Pedersen.--Pedersen relates speculation to inflexibility. Herein, unquestionably, rests some of the most important effects of uncertainty. Since, however, Pedersen develops his theory of cumulation in connection with a Wicksellian process, discussion of it will be deferred to the next section.

Einarsen.--It has been stated that Einarsen indirectly evolves some kind of a theory of miscalculation of the extent of the market which he ties up with a mechanistic device of alternately increasing and decreasing utility. However, he does not develop a theory of cumulation which has its basis in entrepreneurial errors of investment. Rather, he ties up his mechanistic hypothesis with variations in the rate of interest. For the rest, the theoretical approach is purely generalized description and does not contribute to causality.

The discussion in this section heads to one important conclusion. No one of the Scandinavians builds up a complete theory of the cycle around the errors of the exchange process. Those who accept some of the so-called psychological elements of the cyclical characteristics simply apply the psychological factors as accelerating factors, either in the reversing phases of the cycle or in the cumulative phases.

Without going into differences in meaning this writer agrees with this more or less generally accepted position of the Scandinavians. The psychological factor can serve only as an accelerating element in business cycle analysis. Whether or not the errors of judgment made by both entrepreneurs and consumers in evaluating risk can be called errors of optimism or pessimism must be left for those skilled in risk theory. The important point is that no complete theory of the business cycle can escape treatment of the subjective elements in the processes of maladjustment thus partially generated.

C. Credit and Savings, Overinvestment and Oversavings Theories

It is in connection with this section that the more recent discussions on the cumulative process are to be broached. The reason for this is that the majority of modern theorists are chiefly concerned with the credit and savings features of the economy and the theoretical developments in this field have become closely allied with the Wicksell process.

Any discussion of cumulation leads directly to an examination of the place of inflexibility, friction, psychology, and anticipation in the theory of the business cycle. As Pedersen aptly affirms, the problem of the cycle is not so much whether there is a cycle, but rather what is the nature of the economic inflexibility. Surely, it cannot be denied that an economic society devoid of inflexibility is a society without cycles, providing the term "inflexibility" is broadened to include a number of things. This last sentence may be restated in some such fashion as this: an economic society in which there is perfect knowledge is a society without cycles. Whether or not these statements really imply a synonymy between "inflexibility" and "uncertainty," the writer of this outline hesitates to say. Nevertheless, it seems to him that such a synonymy is implied by some writers on these phases of cycle theory, or, as has earlier been observed, inflexibility begets uncertainty. Others of this brand of theorists assume that an inflexibility of some kind exists and perforce if equilibrium is disturbed (sufficiently!) then a cumulative process is thrown into movement. Yet, an economic system may be conceived in which there is inflexibility and not uncertainty. Hence it could be argued that in such a society there would be no business cycles (at least, why could it not be argued!). May it also not be possible to hold that a society of perfect inflexibility, but yet with perfect knowledge is a society a bit akin to the concept of the stationary state, or the state of the circular flow! (Or is this argumentation an abortive form of Hegelian dialectics?) It seems, therefore, that the present cycle theory would be better off if it sought to develop the relationships between uncertainty and inflexibility. Myrdal has some such idea in the back of his mind, but his attempt to "objectify" risk has led him astray.

To belabor the point a bit further, in a society in which there are perfect flexibility and perfect knowledge, change appears with no extended departure from equilibrium. Change in itself (see Knight) is incapable of creating any disequilibrium condition of the cyclical variety. Inventions and discoveries (if they would be conceivable in such a fiction) are absorbed immediately or at the discretion of the business manager (not entrepreneurs) without any disturbance or a cyclical variety. The moment, however, the inventions and discoveries are to be adapted under the conditions of imperfect knowledge and imperfect flexibility,

then an extended departure from equilibrium has the possibility of appearing, for then there is uncertainty and with uncertainty a process of evaluation of risk which must be carried through by men possessing different talents for evaluation and varying degrees of knowledge about a situation. (It is not difficult to understand, therefore, why anticipation has come to play a very prominent role in the more recent discussions on cycle theory, and why it must be necessary to examine the part thus played by it in such a discussion.)

Therefore, to regard the periodicity of the cycle as a function of economic inflexibility without giving place to uncertainty in the argument is far from tenable. To follow Pedersen's line of thought, it may be argued that once the coefficients of inflexibility have been calculated then the problem of economic rhythm will have been solved. It may be added to this statement that when the coefficients of inflexibility have been derived then there will have been removed much of the uncertainty involved and the periodicity which may then appear will be to a large extent counteracted.

1. Overinvestment Theories

Wicksell.--In Geldzins und Güterpreise Wicksell makes the following assumptions in the presentation of his concept of the natural rate of interest: (1) a stationary state; (2) free competition; (3) a production process of one year; and (4) the maintenance of the capital already in existence. In these assumptions there is, obviously, nothing said about the friction in the economic system, and the choice of a stationary state concept may imply the absence of friction. Myrdal finds such an implication and states that Wicksell never reached a satisfactory solution with respect to the efficacy of a general price level in establishing monetary equilibrium because Wicksell overlooked the frictional factors and the part played by anticipation, therefore, in economic flows of goods and services. Myrdal contends that neither Davidson nor Wicksell were fully apprehensive of these conditions.

It is, however, not possible to agree fully with Myrdal. It is quite true that Wicksell built upon his whole theory of the "difference rate" without any definite reference to the friction found in the realistic economy. (It does not necessarily follow that the assumption of a stationary state means the absence there-

from of friction.) At various stages in his argument Wicksell, however, finds it necessary to assume a condition of price lagging and of lags in the shifts of agents of production in order to develop some point or other. For example, he writes in Geldzins und Güterpreise²⁰ "an actual expansion of production cannot appear immediately, for there is necessary an increase of the real productive forces for this purpose. . . . " Further, "that [the price rise] depends upon the numerous, already mentioned, laws of continuity and inertia and on the strength thereof, that the once-reached prices will be maintained. . . . "

Nevertheless, the rhythmical agent in Wicksell's theory becomes the credit system, its expansion and contraction:

. . . . the general price level is, under the assumption of an unlimitedly elastic monetary system, so to say in an indifferent equilibrium of the same nature as a ball or a cylinder on a plane of a somewhat rough surface: they do not move on by themselves, but come to a rest where they have been placed, because of friction and inertia. If there accidentally appears forces strong enough to bring them out of their equilibrium position, they have no tendency to return to that position, but if the forces which set them going--that is, the differences between the normal and the loan rate--stop working, then they come to a new, likewise indifferent equilibrium position.

The more elastic the money system is, the less it reacts in general to the changes of prices, the longer a more or less constant difference between the two rates prevails, the more significant as a result is the effect upon the prices.

The reason for Myrdal's criticism of Wicksell's natural rate and disequilibrium process should by now be obvious. The truly rhythmical element for Wicksell is the elastic money and banking system, while it is Myrdal's contention that the rhythmical element is to be found in the inflexibility of the economic system. Although Wicksell does introduce some phases of a lag theory he does not carry through properly the basic assumptions with respect to frictions and inertias.

It would be of interest to examine the cumulative process which Wicksell builds up in his Geldzins und Güterpreise; however, the treatment therein is based upon such simplified assumptions stated above that it is questionable that the process so developed has any validity. Obviously, the assumption that all production is one year in length has no meaning. What is meant by stating

²⁰P. 132.

that technical conditions are such that the length of the production process cannot be changed is difficult to say, but it is here assumed that Wicksell assumes that there is no opportunity for a shift of agents of production to the production of capital goods; under such an assumption it is conceivable that the process will be definitely curtailed.²¹ The other assumptions including full employment of the agents of production have validity. The first two assumptions have a Böhm-Bawerkian origin and a Böhm-Bawerkian simplicity. At that time Wicksell seemed still much under Böhm's influences. His Lectures, however, show the development of the marginal productivity theory and, therefore, his process of cumulation takes on a more realistic appearance. A brief development of it follows:

The major aspects of Wicksell's natural rate have already been presented; hence they will not be touched upon at this time. His assumptions this time are (a) equality between the loan rate and the natural rate; and, as near as can be determined, (b) full employment.

"If the banks lend out their money at a basically lower rate than the normal rate, the activity of savings is from the first forced back, and thereby there presently appears an increased demand for goods and services for present consumption." This statement shows rather well the simplicity of the assumptions as to the nature of human behavior and as to the nature of the flexibility of the system. Under more realistic assumptions it may be argued that the reaction to a lowered rate of interest on the part of the savers may take some time; custom, habit, and other factors make for a kind of inertia which is not easily overcome.

Secondly, the entrepreneurs' chances for profit increase and the demand for goods and services, as well as for already existing raw materials for future production, begins to rise. . . . Through the rising incomes, which thereby appear for laborers and the owners of land, possessors of raw materials, etc., the prices of consumption goods also begin to rise, as much more as the production powers which before had been

²¹The present writer does not agree with Lindahl, e.g., who says that "If that the production conditions are rigid with respect to the length of the investment period there is to be found no real capital rate independent of the loan rate, and therefore one cannot talk of a difference between the real rate and the loan rate." It is possible for such a difference to appear under conditions of inflexibility even though the shift from consumer goods to capital goods may not have the significance that it would have under different assumptions.

available for their production and which now are set aside for future production. The equilibrium in the market for goods and services is disturbed. . . . Under a first approximation we are justified in assuming that the total productive forces have already been in full use, so that the increased monetary demand takes on primarily the character of competition between the entrepreneurs for labor, raw materials, natural resources, etc.; this demand also leads at first hand to an increase of these prices while also through the increased money incomes of the laborers and landlords and the rising demand for necessities . . . indirectly to a raising of all the prices of consumption goods.

It is difficult to determine how great this price rise will become during the first year after the lowering of the interest rate. It does not take place uniformly over the whole goods sphere, at least at first, but becomes obviously the greatest when it applies to goods and services intended for capital investments of longer durability. . . . it demands on the other hand that the rate reduction of the banks should be sufficiently long of duration as to effect the rate on long time loans, which sooner or later becomes the case.

here is evidence that Wicksell is fully apprehensive of the basic nature of price developments under inflexibility. To continue, "But more important is the fact that the price rise, whether great or small in the first jump, can never cease, so long as the causes which from the beginning has called them forth continue to apply, in other words, as long as the rate remains lower than the normal."²²

Eventually, it is expected that a price rise takes place for all goods and services, reaching later the same level. Here a new price level is formed and it now becomes the starting point for future entrepreneurial commitments. Evidently, this new level is a new equilibrium, unless, of course, the banks again lower the rate or the natural rate is raised by improvements in production.²³

²²It is not clear what Wicksell means by "so long as the rate remains lower than the normal." There may be two meanings as far as this writer can determine: (a) that the bank lowers the rate relative to the increase in the cost of production due to price rises in the fields of labor and raw materials, at least to an extent that the entrepreneurs will continue to find production of capital goods profitable; or (b) technological improvements continue to raise the natural rate of interest or at least keep it at a profitable level.

The above quotations are from the Föreläsningar, pp. 181-84.

²³Hereby there is reached a conclusion which states the "Lengthened production process" is maintained. This is contradictory to the Austrian analysis and it leads this writer to think that Wicksell has given up more or less the Böhm-Bawerkian notions of the lengthening or shortening of the production process; at least it may be said that contraction of the capitalistic process does not take place with the curtailment of the bank operations as to credit expansion through the lowered loan rate.

Obviously, Wicksell builds up the cumulative process from the standpoint of the theory of money; he is not attempting to explain the cumulative movement of a business cycle. To be sure, this process is adaptive to the cyclical movement and has been so adapted by numerous modern theorists. After all the short-run theory of money (it is not said thereby that Wicksell dealt with a short-run theory of money) and business cycle theory are definitely related.

Brock.--In a sense Brock's theory of the business cycle should be classified as a monetary overinvestment theory. Since he, however, prefers to label it otherwise and since there are some aspects of an important nature which would label it otherwise, the theory has been placed in the class of technology theories. Hence, the cumulative movement which Brock develops has already been discussed. Eclecticism is the rule rather than the exception.

Myrdal.--In an earlier chapter on the natural rate of interest some aspects of the Myrdalian methodology of cumulation have been treated. It was then suggested that Myrdal's approach involved a point in time analysis with friction and inertia present. In fact Myrdal regards inflexibility and anticipation as cousins and to leave them out of the price analysis in the short run theory of money is to leave out the explanation of the cumulative process. Hence economic analysis must be appended by an analysis of rates of reactions of price changes.

Myrdal, as a Neo-Wicksellian, proceeds to correct and to modify the Wicksellian approach to the problem of a stable price level. For that purpose, as has been earlier developed, he presents a reconstructed version of a price level and, then, proceeds to develop the general aspects of such monetary policy which will bring the greatest economic gain to a nation. That policy goes out to derive a stability not for all prices, for such a program can only bring disaster upon the economy, but rather for those prices which are relatively inflexible; and the stability to be sought for in the case of those prices is only a proximate stability. There is to be found, however (contrary to common opinion) an incongruity between price stabilization, even of the kind suggested by Myrdal, and the reduction of cyclical fluctuations.²⁴

²⁴Myrdal stresses a rather close relationship between the conjuncture and elastic currency or credit. "The Wicksellian

The business cycle or the conjuncture is of such a complex nature that it is not possible to achieve a smoothed-out cycle through monetary means alone. There are certain spheres of indifference, which monetary policy may not reach; e.g., the monetary policy of the central bank does not affect all rates of interest, while there are numerous institutional factors which impose restrictions upon the effectiveness of credit policies of the central bank. Therefore, says Myrdal, it is conceivable that a complete conjunctural movement could take place even though there were full equilibrium between the natural rate and the loan rate (Myrdal's concepts) as well as between free waiting and reproduction cost of capital about to be constructed. This does not necessarily deny that the majority of business cycles in reality have their origin in monetary causes and that the amplitudes of them are to a large extent conditioned by the monetary system. That being the case, then there is a problem of relationships to be treated, since there may be an incongruency as stated.²⁵

Let it be assumed that it is desirable to hold in equilibrium the criteria, the capital value of the existing real capital and its reproduction cost, under the further assumption of a monetary policy which has control only over the credit system of the economy. Myrdal designates these criteria, C_1 and R_1 , respectively. (See Chapter IV of this thesis for an explanation of their meanings.) The monetary policy to be established is such that C_1 will be held constant while R_1 will be adjusted to it. "Such an approach may be conceived of as being desirable in many instances, especially from the standpoint of the reduction of the risks in the business world." To hold C_1 constant will be a rela-

cumulative process--which appears because monetary equilibrium is not maintained--has obviously the character of definite phases of the conjunctural fluctuations, as we know them from experience. Especially, if one ties up this monetary theory with gold or with some other conditioning factor under a construction which follows the lines of the quantity theory, and then in the usual way creates elastic margins for the quantity of money and credit, between which margins a credit cycle will have space in which to develop, one may therewith bring within the monetary theoretical scheme the whole conjuncture problem. . . . I wish merely to point out that the Wicksellian monetary theory, regarded from this standpoint, possesses in nuce a complete conjuncture theory." (See "Om penningteoretisk jämvikt," op. cit., p. 280.)

²⁵ibid., pp. 280-82.

tively easy matter, since this criterion is nothing more than a "price formation reflex" of the loan rate of interest, i .²⁶

But how is R_1 to be regulated according to C_1 , since monetary policy has control over R_1 only through C_1 ? "The center of gravity of monetary policy would thus necessarily be based upon the other regulations, which we attempted to bar from monetary policy through the premises of isolation (the premise: that monetary policy has control over only credit)." The joke of it is that in the real world the central bank has really control over only the credit market. Therefore the bank can only be content to regard R_1 as a variable independent of its own monetary policy. That being the case then the bank, if it wants to attain a constant monetary equilibrium, must restrict its program to the regulation of C_1 according to R_1 . However, R_1 may be brought into movement by a great number of changes in the economic system, and as a result the bank will be unable to bring about any stability in C_1 . In the event these consequences are not desirable from the standpoint of the economy, then, because of the enforced monetary policy of isolation, the bank must give up the criterion of monetary equilibrium as a general norm of action. It is forced therefore to attempt to stabilize C_1 or some other price level.

A practical difficulty appears with such an attempt as the latter. Regardless of what price level is stabilized, price stabilization cannot be achieved without breaking down monetary equilibrium. Since the Wicksellian process has a tendency to become cumulative, the desired stability cannot be maintained without great variations in the credit conditions. The result in turn is that the business cycle is not smoothed out. "Price stabilization and the elimination of the cycle are thus competing goals, which for the reasons given are at opposite ends of the pole."

These same results will occur the moment stabilization of any sensitive index is attempted; a Wicksell cumulative process will be set in motion. For this reason Myrdal develops a price index of the inflexible prices which is weighted according to the rentability schedules of the enterprises and according to the coefficient of elasticity of investment; i.e., according to their

²⁶This and the following paragraphs are based on the discussion appearing on pages 286 to 288 in Myrdal's treatise.

importance for the investment process.

These aspects of Myrdal's monetary theory have been emphasized in order to illustrate some of the phases of the problems of cycles and cycle stabilization with which Myrdal is concerned. It should by now be evident that Myrdal's theory is directed primarily to the establishment of a suitable monetary policy and does not develop any theory of the business cycle. Space does not permit the further discussion and presentation of these theoretical observations of Myrdal and to devote but a brief time to an examination of his rather pretentious undertaking would do Myrdal an injustice since his theoretical views cannot be viewed in brief. It is hoped that this presentation of some of his ideas will bring out the mode of analysis pursued by him.

Lindahl.--By right of first appearance, discussion of Lindahl's Penningpolitikens mål och medel should have been given position before Myrdal's "Penningteoretisk jämvikt." It is hoped, however, that by this arrangement that Lindahl's theoretical approach will be brought into a clearer relief than otherwise may have been the case. Lindahl's work, which is highly regarded in Sweden, especially by Myrdal and others of the University of Stockholm, where Lindahl once was a student and teacher, presents a mode of analysis which is gaining general use in Sweden. Therefore, it will be given some detailed attention, although the general thesis of "Mål och medel" is "What is proper monetary policy?"

Lindahl proceeded in his analysis of the cumulative process along lines quite distinct from the procedure followed by Myrdal. The latter tries to illustrate tendencies under one situation, whereas Lindahl attempts to set up a "dynamic process." To put the matter into Lindahl's own words: ". . . we cannot be satisfied with an analysis of how price formation would take place during a single period under alternative interest rates under different and exact assumptions." Rather he would prefer to portray a "dynamic process" under which the analysis may be regarded

as divided into such short periods of time that the conditions of price formation and, therewith, price themselves, may be conceived of as unchanged during each period. The total changes . . . are assumed moreover to occur during the actual transition between the different periods. The price development may then be presented as a series of successive price formation positions.²⁷

²⁷Penningpolitikens medel, pp. 31-32.

Into each of these situations or periods of transition he introduces various assumptions with respect to inflexibility, inertia, the anticipation of entrepreneurs, full employment, and partial employment of the agents of production, and then proceeds to note the cumulative movements which would take place under each assumption made.

Lindahl's analysis becomes thereby an excellent presentation (in more ways than one) of the Wicksellian cumulative process. Some portions of it will be presented herein as illustrative of this new method.

Lindahl treats with one case where the equilibrium position is broken by a lowering of the loan rate (it is lowered relative to the long time rate of interest--Lindahl regards the Wicksellian natural rate as meaningless, although he implicitly makes use of it). With the lowering of the rate a "dynamic progression" or cumulative movement appears. Within that progression three different phases of movement are differentiated while these three phases have within them alternative movements.²⁸ herein is applied thus the process of successive approximations.

Phase I. If the members of the economy hold it probable that the prevailing prices on consumption goods (it will be recalled that Lindahl sets up as a criterion of equilibrium a price level of consumption goods regulated in inversely to productivity) will continue, then there appears as a momentary result of the lowered rate a rise of all capital values. Since the lower rate is applied in the calculations of the values of short and long time capital, the total nominal income (which is set equal to the capital return in the broad sense of capital) will for the time being remain unchanged. The distribution of income, however, has changed to the advantage of the borrowers with a corresponding offset for the lenders. It is probable that savings decrease, but that decrease may be compensated by the distribution of income "to the advantage of those in debt." On the other hand the net result may be a negative or positive savings whereby the price level will be affected so that it either falls or rises: while if there is no net savings, the general price level will remain unchanged.

This displacement of the rentability of the production of

²⁸ibid., pp. 33-48.

short time capital goods in favor of long time capital goods production,²⁹ nevertheless does bring about a tendency to an increased holding of goods in stock, a tendency to the re-allocation of the agents of production, resulting in the much disputed situation of a lengthened process of production.

What is the final result depends upon the assumptions made. Lindahl proceeds to treat with a set of such assumptions. They follow.

Phase IIa. He first assumes that for some reason or other there is such rigidity in the system that it is not possible to increase the production of capital goods nor to keep goods in storage.

Under this assumption the production of capital will continue as before, in spite of the fact that the lowered rate has introduced a price rise of such goods. It is conceivable that the entrepreneurs in the capital goods industries attempt to expand their activities, but the result thereof is merely a price rise of the "original production forces" employed within that branch of production. These agents of production thus receive higher incomes, while the income of the entrepreneurs is reduced. "We furthermore find that the increase in income which at the expense of the lenders went to the entrepreneurs in debt in the capital goods industries, to the degree that they had borrowed at fixed rates of interest, is not to a considerable extent shifted to the laborers and the owners of natural resources. . . ." Thus the total nominal income remains unchanged. And since the supply of consumption goods is the same as before, the consumption goods prices will remain the same.

The important conclusion to be drawn from this argument is, as Lindahl emphasizes, that "a change of the rate does not affect the price level for consumption goods, if it does not introduce displacements within production and the storing of goods,"

²⁹ Lindahl simply refuses to make use of the Wicksellian differential rate of interest, even though he says approximately the same thing by referring to the differences in return to the different forms of capital. It must be said that the distinction is, furthermore, of small significance, for what he really has in mind is that the present loan rate is lower than it was previously; and whether that previous loan rate applied to long time capital --whatever that is--or short time capital--whatever that is--makes no difference.

nor change the magnitude of saving."³⁰ In this connection he has reference to the findings made by Wicksell to the effect that the increase in income going to the owners of the "original production forces" as a result of the lowered rate is sufficient to bring about a cumulative price rise. The above conclusion would point to an error in this finding, says Lindahl. Whether or not he is correct in his position depends mainly upon the assumptions which may be made. If the entrepreneurs who lose income with the increased payments to the agents of production immediately reduce their purchases by the extent of their loss in income then such a conclusion as Lindahl's is valid; if, on the other hand, the entrepreneurs are slow in curbing their expenditures--and this assumption is far from unrealistic--then a cumulative movement may set in dependent upon how fast the agents dispose of their increased incomes.

It thus becomes obvious that the problem of the Wicksellian cumulative process is no easy nut to crack. Lindahl criticises Wicksell on the grounds that the latter assumes rather rigid production conditions in that he treats with the simplified assumption of a one-year production process. Under such an assumption, says Lindahl, it is impossible to talk of a natural rate of interest which is different from the loan rate; any loan rate may be regarded as a regulator of the production process. It thus seems that Lindahl argues that the interest rate is a function of the time length of the production process. How he can argue that marginal productivity is a function of round-aboutness of production rather than of the scarcity of capital relative to the other agents of production is beyond the understanding of the writer of this thesis. It seems probable, rather, that a cumulative process is possible under the simplified assumptions made by Wicksell, providing proper attention is given to the changes in the spending programs of both the entrepreneurs and the agents of production.

Phase IIb. Continuing with the assumptions that there is full employment of the agents of production, while dropping the assumption as to the rigidity of the production process or of technology, Lindahl now finds that the lowered interest rate will bring about the storing of goods and the readjustment of production in a more "capitalistic direction." The cumulative process

³⁰ ibid., p. 36.

is as follows:

At first there is a price rise in consumption goods with increased storing of goods, assuming that the production of consumption goods is not increased for a time. "After the change in the storing of goods has been carried through, the offer of consumption goods becomes the same as in the beginning, while the nominal incomes may be assumed to adapt themselves gradually according to the newly reached price level."³¹ Unless there is an increase in the savings of the community a new equilibrium position will be reached as well.

But that equilibrium position may not be held. By degrees there appears a shift of production resources to bring about a lengthening of the production process under the increased rentability of the continued low rate. The prices of the agents of production have risen to a greater or less degree relative to the consumption goods prices, while within the capital goods industries activity is so arranged that the new capital goods are constructed more durably than before and the time-length of the production process is increased. How the total nominal incomes are affected by these changes is difficult to say. One undebatable result is that because of the increase in incomes the supply of consumption goods decreases gradually with the increased purchases by the agents of production receiving the increased incomes. Even though prices for such goods may go on up it is still realistically conceivable that the purchases of these goods increases for usually the laborers have low powers of savings, preferring to spend their incomes. Thus the price rise becomes cumulative. It affects the value of the capital goods, which, in spite of the increase of their supply, will go up in price. Here then there is an increase, most likely, in the nominal incomes, although not uniform, especially for the entrepreneurs who have borrowed under the lowered rate. It is probable that savings will not be increased to equal this increase in income, and the result is a further price rise in consumption goods. Cumulation continues.

Under more realistic assumptions as to the nature of friction and inertias in the economy the price changes will have somewhat different courses than described. Because of the inertia of the wages of labor, the incomes of labor are increased rather

³¹Ibid., p. 37.

slowly. The entrepreneurs who have received the greatest increase in income presumably save the larger portion of this increase so as to make use of the new investment possibilities. A price rise of consumption goods releases a price rise of the capital goods, insofar as the price rise of the former is not assumed to be temporary. For this reason the price curve for the consumption goods will come to lag behind that of the capital goods, while prices as a whole will take on a more moderate course.

One of the chief accelerating factors in the cumulative process is the fact that the people who receive higher incomes--the entrepreneurs--under the lowered rate, are the ones who have a high propensity to save. They, finding the new transition profitable, will go out of their way to increase their investment and, therefore, the greater portion of their incomes is saved, thus stimulating the investment process and the cumulative process upward.³² Although Lindahl does not say so, the assumption behind this accelerating factor must be that the savings program of the entrepreneurs, although concentrated and extensive, is still not sufficiently great to bring about a reduction in the total income spent on consumption goods, so that the price rise may be maintained for the while in that bracket of production. It is possible that the savings undertaken may be greater than the rate of spending, and should this take place during the later stages of a cumulative movement it may precipitate a decline in the prices of consumption goods and halt the upward movement. The latter contention is supported by some of the more sophisticated oversavings theorists. Of course, the effect of increased savings depends considerably upon the inertia to be overcome and thus upon the rate of acceleration of such a savings increase.

Lindahl makes an additional point in this stage of his argument which is of more than particular interest. He holds that this process of cumulation just developed demonstrates that the magnitude of real capital formation need not necessarily be di-

³¹In this connection Lindahl makes a point with respect to "forced savings" which is of especial interest. "Under a monetary system it is to the individual's choice to save as much as he wishes; it is only to the extent that his failure to consume depends upon the lack of credit that there appears forced savings from the standpoint of the individual." The usual meaning applied to "forced savings" is valid only in so far as it is viewed from a social standpoint and not from the standpoint of the individual.

rectly dependent upon the amount of savings. In other words, a lowering of the rate of interest brings about a shift in income under the price rise, which reduces the incomes of those with fixed salaries or fixed returns upon investment, while the group which saves the most will gain in income. Under this price level displacement the total savings in the community is brought to equal the increase in the value of the real capital. (Presumably Lindahl would argue thus that savings is automatically adjusted to or always equal to income.)

The causal connection should rather be so presented that the rate of interest, to the extent that it determines the price relationship between capital goods and consumption goods, makes capital production rentable to a definitely determinable degree. The necessary saving appears thus for the greater part voluntarily and the causal factor becomes in specific cases the change in the distribution of income because of the displacement of the price level.³³

This contention, which is nowadays generally accepted as one of the tenets of the so-called Stockholm school of monetary theory marks the new approach in the theory of interest that is gaining acceptance in England and America through the efforts of Mr. Keynes. It places the causative burden upon the loan rate of interest, so that savings will more or less always be a product of the price changes that occur because of a lowering of that rate. Hence savings, it is contended, will always be equal to investment, since the savings are the result, rather than the cause, of the transition to the production of capital goods. This result is paradoxical in the light of accepted capital theory (whether viewed from the position of Davenport, Knight, or Marshall); nevertheless, it is the trend in the thought on the short run theory of money and of price formation into which money enters, and indicates, then, the effort to explain the price formation process with money present, rather than abstracted from in the analysis. Unfortunately Lindahl does not develop more fully his argument, so it is not possible to determine his exact position with respect to the marginal product of capital and its relationship to the loan rate. As has been stated, Lindahl spurns reference to a natural rate of interest and the theory of interest which he does develop is quite inadequate. Interest, according to his theory, is nothing more than the continuous appreciation

³³Ibid., p. 42.

of capital goods due to the passage of time. Therefore, it is rather difficult at times to determine what he means by income, since he regards income as interest in this rather general sense. As he states in an earlier article,³⁴ profits and losses belong to quite a different category than income or costs. Since he does not state whether or not the incomes received by the entrepreneurs to the cumulative movement are the result alone of interest, it is not clear what he means when he speaks of the savings of the entrepreneurs for, obviously, a portion of the savings of these same entrepreneurs must come from the profits (unexpected returns due to rise in the prices of capital and consumption goods) which have accrued under the course started by the lowering of the rate of interest. It is learned, however, in this same article that unforeseen savings may appear, savings presumably due to profits on capital, or changes in the value of capital due to price rises. Here then seems to be an inconsistency or else a misunderstanding of Lindahl's position. In any event, the theoretical background is far from clear, since Lindahl mixes rather badly a typicallian risk theory with a Böhm-Bawerkian capital theory.

[Phase IIc. Lindahl next assumes that at the time of the lowering of the rate there is to be found unemployed agents of production. (A status of disequilibrium, as it were.) In addition the expansion of capital goods production is a necessary assumption to the appearance of a general price rise. "But in opposition to the above case this expansion of the capital goods production may take place without corresponding contraction of the production of consumption goods."³⁵ It is therewith assumed, for the sake of simplicity, that the unemployment is with respect to labor.

Hence, if this unemployment existed only in the consumption goods industries and if it were not possible to transfer labor resources to the production of the long time investment because of technical reasons, then the process of cumulative will be the same as in IIa.

On the other hand if there is unemployment in the capital

³⁴"Fortsbildningsproblemet i uppläggnings från kapitalteoretisk synpunkt," *Ekonomisk Tidskrift*, XXXI (1929), 42-44.

³⁵*Ibid.*, p. 42.

goods producing industries and if there is no inflexibility with respect to the transfer of labor resources then capital goods production can be expanded. In such an event there appears a cumulative movement which may develop partly under the first condition of unemployment in the capital goods industries and partly under the assumption of flexibility of the agents of production, and this cumulative movement will correspond essentially to that of IIb; "the difference lies in the fact that the consumption goods are not decreased to the same extent as therein described."

Lindahl proceeds to develop various aspects of cumulative movements under variant assumptions with respect to the nature of the flexibility in transfer of labor. Of interest is the case in which he assumes the existence of unemployment in the capital goods industries, but with rigidity preventing the shifting of labor from the other industries. The effect of the lowering of the rate will be a price rise of the capital goods which brings a decrease in unemployment. In turn the total nominal incomes of the system are increased and this brings about an increased demand for consumption goods and a price rise of these, while the supply according to the assumption will remain unchanged. The extent to which the price rise becomes more or less rapid than that in IIb depends upon the assumptions. The condition, that the quantity of consumption goods does not decrease, may be regarded as having the effect of slowing down the price rise for those goods. On the other hand, it must not be overlooked that the increase in income in this case is much more rapid, since the unemployed are being absorbed by the capital goods industries; hence this income group will spend more for consumption goods.

If there is also at the same time unemployment in the consumption goods industries, the price rise will be to some extent retarded, because there will be a lag in wages and it will be profitable to take on some of the labor in the consumption goods industries. Under such circumstances it is even possible for the price rise to come to an end, prices even tending to decline, although at a slower rate.

This approach of Lindahl's to the problem of unemployment could profitably be examined by those who advocate a program of pump priming to restore business activity. The injection into the system of a great amount of government spending may have absolutely no results unless the conditions with respect to unem-

ployment in the various industries are taken into consideration. The status of affairs in America evidence quite clearly the failure to prime the proper industries, so that a reaction has set in which is worse than the previous stage of depression.

Phase IIIa. Under the first assumption, that prevailing prices will continue in the future, the transfer of production agents from short capital to long-time capital goods production will gradually tend to cease. The increase in the long time investments tends to lower their rentability, so that production of these goods will continue during each time period to the point where the rentability has fallen to the level where it is equal to the prevailing rate. (Here "rentability" must mean the natural rate, to use Wicksell's or Myrdal's terminology, preferably the latter's.)

It is to be noted that the price rise which, as has previously been developed, becomes the result of the transfer of the agents of production brings about an increase in the rentability of the long-time investments relative to that of the short-time investment. It has now an opposite effect for two reasons: (a) it stands in such a relationship to the displacement of the prices of the consumption goods, that the products which demand much waiting (savings) fall in price relative to the remaining and (b) the lower wages resulting from the lag and prices of other production services have a tendency to raise the rentability of the short-time investment. These two conditions which may be assumed to be anticipated to a certain extent by the entrepreneurs, receive increased weight, the longer the price rise continues. Even if the transfer of the production factors because of friction may take a long time, the price rise will gradually become less comprehensive. The entrepreneurs tend more and more to limit the capital investments to the replacement of those capital goods which have been worn out in production. With the growth in new investments that does come there appears a restraining influence upon the price rise, and it is possible that this rise comes to an end after a time. A new equilibrium is reached, if there are no factors such as improved techniques, increased savings, growth in population to bring change. Here, then, is a case where the lowering of the rate does not bring about a continuous price rise, but the price rise ceases when the capital has been increased to the point to correspond to the lowered rate.

Phase IIb. As Lindahl states the preceding argument builds upon the assumption that the entrepreneurs anticipate only changes of the relative prices but not a continued rise of the general price level. If this assumption be dropped and the more realistic condition be introduced, that the public believes that the price rise will be general and will continue for some time, then a cumulative (Wicksellian) movement sets in. Hereby the long-time investment appears more profitable than the short-time, and the result is that displacements in production becomes far more powerful than in the above case. The price rise is accelerated, resulting in more and more powerful displacements. The result is that the lowered interest rate has a truly cumulative effect upon the economic processes.

Heckscher.--The writer has waited to this point to introduce an observation or two upon an article written by Eli Heckscher in 1921,³⁶ because Lindahl's treatise sets the background for an examination of Heckscher's position. Under the assumption that the credit created by the banking system and drawn into use by a lowering of the loan rate is taken entirely by the entrepreneurs, he builds up a cumulative process which ends in equilibrium. The condition necessary to the establishment of such a conclusion is that there is no change in incomes under the lowered rate, except for the incomes of the lenders. A price rise for capital goods will take place, bringing about an increased production of such goods. "The displacement which is shaped by the credit creation between the demand for real capital and the demand for consumption media draws the necessary productive powers from the proportionately less demanded goods to the proportionately greater demanded goods and forces therewith the whole economy to increased savings."³⁷ The term "forced savings," he says would hardly be appropriate since there is no change in the incomes of the different groups of the economy. Eventually the price rise of the capital goods comes to an end and prices for these goods go down, as the prices for consumption goods go up, resulting therewith in an equilibrium between the two price groups and equilibrium in the capital market.

³⁶This article appeared as one of a series in a "festschrift" to Wicksell in the Ekonomisk Tidskrift, that year, pp. 49 ff.

³⁷Ibid., pp. 51-52.

On the other hand, should the expansion of credit apply not only to the entrepreneurs but also to the consumers so that they also have increased spending powers, then a Wicksell cumulative movement sets in.

This approach to the Wicksellian cumulative movement serves to show how little an understanding was had, even as late as in 1921, of the nature of the frictional and inertia elements in the economy. As Lindahl develops it is possible for a Wicksellian cumulative process to be set in motion through the lowering of the loan rate to the entrepreneurs alone. All that is necessary for the process to get into motion is that the entrepreneurs find it advantageous to make use of the funds thus created for them and that there are no technical rigidities so that the production of capital goods will be carried through. This process in itself initiates a flow of income to both entrepreneurs and to other members of the economy. Prices for consumption goods will go up, making capital goods more valuable; while wages lag for a time behind the price rises for the capital goods, so that the effect in general is a continued increase in the production of capital goods without equilibrium appearing for some time. It is unnecessary to make an assumption with respect to consumer credit expansion in order to explain the cumulative process which will affect incomes in general.

Johan Akerman.--Akerman is quite critical of the introduction of friction and risk into business cycle theory, all in spite of the fact that he is a strong adherent of the Wicksellian theory of money. He is especially critical of Myrdal, whose analysis, he contends, merely involves the addition of further appendages to the "static" system and, thus, treats only with "oscillations of anticipations between the price formation of the present and the price formation of an indeterminate time in the future, while it does not treat the course of the price formation between these two points." In other words, Myrdal's theory is far from dynamic according to the standards set up for Akerman for a dynamic economics which must go out from a study of the relationship of price formation to time.³⁸

The Akerman theory of the cycle is a hybrid theory which gives emphasis to two elements, economic progression and the bank-

³⁸Om det ekonomiska livets rytmik, p. 10.

ing system. It is the product of a union of the Casselian theory of economic growth and the Wicksellian theory of money, together with psychological and other elements less basic than the two mentioned. As it has previously been defined, the cycle is a function of economic progression, the seasonal factor, the psychological factor, the construction time of real capital, and of time, i.e.,

$$y = F(t, p, s, i, r).$$

The progression factor in turn is made up of a magnitude of production media engaged in the production of capital, the growth of population, the change in wants, technical growth, and commercial growth. Since production takes time and since it is beyond the pale of human knowledge to predict in detail what the future will be as to detail, it is therefore impossible to bring about economic progress without maladjustments in the economic system, maladjustments which become cyclical in character. Impulses may come from two sides in the free enterprise economy: from the side of production, when new and improved methods of production are introduced; and from the side of banking, when the rate of interest is lowered by the banks. These impulses, which signify a raising of the profit rate of the entrepreneurs (profit rate as Akerman defines it, is treated in an earlier chapter in this thesis) or a lowering of the loan rate (Wicksell), respectively, set the investment process in capital goods into motion, and the speed with which the capital structure is accumulated becomes a function of the amount of savings made available (which amount includes "forced savings" resulting from the price rise that comes with the lowered bank rate).

Akerman's treatment of theory makes it difficult at times to distinguish the cumulative elements from the impulse elements. Akerman leads one to believe that the expansion of bank credit may be an accelerating factor at one moment in the argument, while in the next moment he speaks of it as an impulse factor. It is not clear how the banking process may contribute to rhythm in the economic system, since even Akerman admits that there must be a profit element present to induce the entrepreneurs to take up the offered "easy money"; in other words, it would seem that he holds that banking system once it has lowered its loan rate can only be passive when it comes to inducing borrowing by the entrepreneurs. Further on in his argument there is evidence that he thinks in

terms of costs lags as a factor in inducing the borrowing of the entrepreneurs. "The lag of wages behind the price level would seem to be the most important inner cause contributing to expansion of production by the entrepreneurs in order to increase profits. . . ."³⁹ The importance of the psychological factor as an accelerating agent in the upswing has already been noted; however, at times it seems to have the qualities of an impulse factor.

What Akerman has in mind when he points to the relationship between time and the cycle is also not clear. If he means that since production takes time there is an increase in the risk element, then he is back on the same ground as Myrdal; and there is reason to believe that he must have some sort of risk factor in mind when he speaks of the difficulty of prediction. That there seems to be such a meaning may be noted from this quotation:

. . . . expansion of the means of production cannot take place all the time and in regular proportion, it being humanly impossible to determine in advance the nature of future needs. If when the depression has reached its lowest point a position of equilibrium has been attained by a process of readjustment in industry, resulting in the means of production meeting the requirements of consumption, then this equilibrium will be upset by the revival. It is characteristic of economic life that this formation of new means of production should centre in certain branches that offer the prospect of high profits, and that the capitalists' 'herd instinct' contributes to this one-sided form of investment. There comes into play, however, yet another factor, which is of vital importance in this connection, and that is, that nothing is actually known as to whether this capital investment has been too one-sided before the new factories are ready to start working and sending out a fresh flow of commodities.⁴⁰

Here is indeed a theory of errors, and surely Akerman cannot escape placing weight upon the risk factor. Likewise, he cannot set aside the importance of the friction factor, for his whole theory is impregnated with lags and tacit assumptions as to rigidity.

To treat more specifically with the monetary aspects of the business cycle as developed by Akerman, it may be said that the cumulative process which he develops is the characteristic Wicksellian process, but bolstered by a lag theory of wages rather

³⁹ Ibid., p. 236.

⁴⁰ Some Lessons of the World Depression (Stockholm: Centraltryckeriet, 1931), p. 13.

than by a study of the frictional elements which work upon prices and the movements of the agents of production. He does not treat in any way with the effect of the lowered rate upon the income structure, so that his analysis is quite rudimentary in form, being not very far removed from Wicksell's own approach. He prefers rather to regard the natural or profit rate as kind of factor contributing to the self-generating forces of the business cycle:

"The real interest rate, the actual yield derived from the means of production, undergoes a constant change, and may reasonably be said to represent the nuclear line of the cyclical waves."⁴¹ Another quotation will serve to evidence this position: "Rather one should say, the length of the production period forms a lower boundary for the extension of the conjuncture in time, while monetary policy the upper"⁴²

In a sense Akerman does not present a systematized body of theory. In his eclecticism he simply develops to a considerable degree in a separate form each aspect of the cyclical process, but does not effectively tie up each element thus introduced into a clear exposition of the parts played by them in the disequilibrium movement which he features as the cycle. Although he places great weight upon the savings process which is necessary to the capitalistic growth of the economy, he, in no way, introduces an analysis of the behavior of income and its relationship to savings. It may, however, be concluded that the cumulative process which he theorizes is basically a phenomenon of rapid capital accumulation which is bolstered by the credit structure and perhaps even accelerated by the credit and banking structure, while the basic accelerating features of the movement upward are: a lag in wages, a psychological factor of entrepreneurial reaction of some kind or other, and the fact that production takes time in reality being a risk factor which he refuses to call by such a name).

Jorgen Pedersen.--Following Myrdal's attack, Pedersen takes the position that the Wicksellian cumulative process is not possible under the stationary assumptions made by Wicksell, rather it is necessary to introduce the realistic conditions of friction and inertia into the analysis. In the cumulative process which

⁴¹Ibid., p. 20.

⁴²Om det ekonomiska livets rytmik, p. 159.

he presents the important element is the wage lag which contributes to raise the profit rate of the entrepreneurs who, thereby, are stimulated to borrow more and thus expand the productive plant and equipment. As has been stated in an earlier chapter Pedersen places too much weight upon wages as being a force in contributing to a breakdown of equilibrium. If it were possible all at once to bring about a general rise or decline in wages then the developments in the economy would be of a nature such as would probably bring about in turn a reduction of the amplitude of the cycle. To assume, as does Pedersen, that a cumulative movement upward may be induced by a general lowering of the wages, assumes thus a broad control over the labor group which is possessed by no competitive, capitalistic economy.

Pedersen makes one point which should be mentioned, since it brings out a matter which is nowadays being generally experienced, namely, that the loan rate may not be very effective in either stimulating or retarding business activity during certain phases of the cycle. Other factors such as lowered or raised wages, improved methods of production, and changes in business technics must accompany the change in the loan rate to induce, for example, a recovery.⁴³ It is conceivable, he says, that the loan rate may sink to a negative value without bringing about the desired entrepreneurial action. Presumably, he would also hold that marginal productivity of capital has reached an extremely low level. It must be understood that Pedersen does not present a cycle theory.

Ohlin.--Ohlin, likewise, does not develop a systematized theory of the cycle.⁴⁴ Rather, he has preferred to study certain phases of price formation under the influences of changes in the value of money. However, he does present an analysis of the cumulative process which is especially applicable to the problem of cycles. Under a redefinition of the concepts of income and savings, Ohlin proceeds to develop price movements of the different categories, already reviewed, relative to varying conditions of economic reaction to change and to secondary reactions. In the

⁴³"Wicksells Theories des Zusammenhanges zwischen Zinssatz und Geldwertschwankungen," Archiv für Sozialwissenschaft, 1933, pp. 138-40.

⁴⁴See especially "Till fragan om penningteoriens uppläggning," op. cit.

analysis of price movements Ohlin does not reach that preciseness attained by Lindahl or Myrdal and, as he holds, precision is an impossibility. It is easy enough to agree with Ohlin when one considers the part played by uncertainty in the business cycle. His analysis of the process of a price rise is thus of definite value and interest.

The special case to which reference here is made does not assume a perfect equilibrium as a starting point; first, it is merely assumed that the "different price indexes" have for a time remained constant and, second, production capacity in most of industry is not fully used. Under these conditions he introduces a lowering of the rate of interest (both the rediscount rate and the rate on obligations).

The result is that investment in durable capital goods appears more profitable and accordingly there will be more demanded and therefore the prices for these goods tend to rise. Production of these goods is increased, attracting workers to this form of employment, lowering the unused plant capacity, and stimulating a price rise in the raw materials and process goods which go into the production of this durable capital goods. Both gross and net income increase, wages and entrepreneurial returns being pushed upward by the added production.

The increase in income brings increased purchases of consumption goods, resulting in a rise in the wholesale prices of consumption goods; and it is only later that retail prices of such goods goes up. This increased demand for consumption goods leads shortly to an increased demand for raw materials and process goods in these lines of economic want-satisfaction. A price rise in these goods will be the result; and this increase in demand and price depends in no way upon "an anticipation of a rise in the wholesale prices of consumption goods, rather this increase grows to such an extent that anticipation takes place."⁴⁵ An important element to note is, namely, that unit cost goes down as transactions in the goods increase.

Now the movement spreads to the capital goods used in the production of consumption goods and the raw materials and goods in process which go into consumption goods, since the production of these is now more than ever profitable. Thus the price move-

⁴⁵Ibid., p. 64.

ment is strengthened. How profitable the production of new capital goods will be depends upon how far the wages of labor are pushed up during the process. "If the wages rise with the same percentage in all branches of production, new machines become more profitable in the consumption goods industries than if with the same total wage rise only an insignificant wage rise had taken place in these industries."⁴⁶ It is impossible to set up simple rules governing the strength of the price movement at different points. One generalization may, however, be drawn. During the first part of the price rise period every producer and middleman demands more goods than he has sales; for that reason the demand and prices for raw materials tend to rise faster than the demand and prices of finished goods. "The increase in demand is accelerated 'backwards.'" It should especially be observed that the relation between the price on durable capital goods, which are used for the processing of raw materials into semi-finished goods, do not depend alone upon the height of the remaining costs of manufacture, but also upon the anticipations with respect to their future price relationships, wherefore, again no simple rule may be given as to the changes which may appear between the relationships.

There is one statement in Ohlin's article which brings out most succinctly the cumulative process as he sees it (and it may be added: as it would seem from a fairly rational approach to the problem). That statement follows:

The tendency to an increase of the production of capital goods leads hence to an increase of the incomes in these industries, which in its turn increases the demand for consumption goods and the incomes in the consumption goods industries. Hereby increased investment comes to look profitable and the demand for capital goods grows still more. Etc., etc. The price system is forced into ethereal heights.⁴⁷

The conditions necessary for this truly self-generating aspect of the cumulative movement are: (a) the assumption that the low rate of interest will prevail; (b) that the entrepreneurs anticipate further price rises, while yet anticipating that long-time investments will not be more profitable, perhaps even less so than at present prices and price relations; and (c) that there is no re-allocation of the agents of production from consumption goods industries to capital goods industries. The tacit assumption, basic

⁴⁶ Ibid., p. 64.

⁴⁷ Ibid., p. 66.

to all of these aspects of the case, is that the price relationships necessary for the development described continue on some such basis as will make for a conditioning of the whole process, and the reason for the existence of the price relationships in the first place is that friction has made them so related.

There is one element which Ohlin does not, however, introduce into his argument, although it may be inferred from his study of price relationships. That is, from one standpoint it may be said that as long as the prices of capital goods remain relatively more than the prices of consumption goods there will be a cumulative movement, assuming too, of course, that the entrepreneurs anticipate the continuance of such a relationship. The adjective "more" is used to imply a continued profitable relationship. This is a point which the critics of the overinvestment theories overlook when they say that a lowered rate of interest or increased savings will not induce investment, that the stimulus to investment rather, according to their theories (especially some of the oversavings theories), must come from the consumption goods side, in that a price rise in consumption goods will stimulate investment in capital goods. Once such a price difference comes into being (due to a difference between the loan rate and the natural, e.g.) it will bring about entrepreneurial activity in the capital goods industries, even though there is no price rise in consumption goods for some time; the Böhm-Bawerkian idea that entrepreneurs go about continually capitalizing the values received from the sale of consumption goods has little meaning in the short run, for then the entrepreneurs are concerned with their marginal revenues as related to their marginal costs and average costs. In the capital goods industries, especially is it true that any opportunity seen to reduce average total cost, simply through increased production, will be hurriedly seized. Ohlin has a clear understanding of the latter point.⁴⁸

The Swedes, especially Ohlin and Lindahl, have attempted an approach to the above element of acceleration. It is as follows: Should the price rise become favorable for long-time investment then the process of cumulation will continue for an indefinite time or should the entrepreneurs anticipate increased profit-

⁴⁸Ibid., p. 65. Here he speaks of the general costs per unit being reduced by increased production.

ability for long time investment then they will be stimulated into carrying on the expansion program even further. But no one of these writers explain what is meant by long time relative to short time investment. (Throughout the Scandinavian literature there is much confusing discussion of this subject of the investment process.)

There is one criticism to be directed against Ohlin in the use of the assumption "as long as the loan rate remains low." Like many other users of the notion of a low rate of interest he does not explain what he has in the back of his mind when he uses the adjective "low."

A final point may be made with respect to the cumulative process as developed by Ohlin. He states that when a general price does develop it means that the demand for goods rises more rapidly than the supply of such goods. One possibility for such an increase in demand is that entrepreneurs find investment in capital goods profitable; another is that the demand for consumption goods is growing. "The necessary and sufficient condition for a price rise process is that the sum of these two kinds of demand grows in relation to production."⁴⁹ Whether or not this is to be regarded as a concession to the oversavings school of cycle theory need not be of concern; the important thing is that Ohlin shows that the cumulative process cannot continue without a composite growth in the two kinds of demand. It is not necessary that consumption demand grow faster or slower relative to the increase in production, and that their growth be equal to the growth in production. If this were not so then the price rise process would soon come to an end.⁵⁰

Einarsen.--Einarsen appends his more general thesis with a monetary explanation of the rhythmical movement of the cycle. Changes in the value of money brought about by the lowering or raising of the rate of interest induce tendencies to capital accumulation or cessation in such accumulation as the case may be. Presumably the change in the rate of capital accumulation has a

⁴⁹ Ibid., p. 67.

⁵⁰ Ohlin does not deny the possibility that a price rise may come from the demand side for consumption goods. The process thereby started means first a rise for these goods which later creates indirectly increased demand for capital goods. From there on a cumulative movement sets in.

rhythmical effect upon the economy, but how, Einarssen does not state.

Sinding.--In order for credit creation to result in a cumulative process it must be associated with a general expansion of plant and equipment. Furthermore, it must be "credit" or borrowed funds that is used to finance the expansion and not the entrepreneurs' own capital which may be obtained through the sale of stock or through the reinvestment of earnings. Hereby Sinding overlooks the fact that "credit" may go first to the stock market and then to the corporations by the way of the sale of stock, as it were, on credit. Witness the expansions of 1928-1929.

2. The Oversavings Theories

It is perhaps needless to say that the oversavings or the underconsumption theorists are forced to assume tacitly or explicitly that inflexibility exists in the economy. In this respect they are no different from the overinvestment theorists. The distinction between these two schools rests upon entirely different grounds.

Pio.--One broad distinction, namely, that the initiating factor for investment in capital goods must come from the consumption goods side and not from the side of the demand for capital goods, is made by only one of the trio placed into this group of theories. That writer is Pio, for he develops the thesis that savings, under certain conditions, leads to underconsumption. According to Pio the savings process in the modern economy is cumulative, i.e., that people tend to save more and more out of their growing incomes with the result that there appears a surplus of unpurchased consumption goods. His analysis follows.

The one assumption which he makes at the beginning is that saving is always accompanied by a corresponding increase in capital goods, thus disregarding the possibility of an increase in such goods without saving through a more intensive use of the existing production media. He then sets up a hypothetical economy in which there are 50 individuals receiving a yearly income of 10,000 krs. (crowns). These individuals each decide to save 2,000 krs., so that out of an annual income of 1,000,000 krs. 100,000 are saved. It is assumed that these savings take place in one year, so that the next year the savers again demand consumption goods with the whole of their incomes. Pio assumes further that

the entrepreneurs have foreseen the situation so that savings are distributed equally over the economy in the production of consumption goods, thereby a case of partial overproduction being avoided (Pio means by partial overproduction a situation of horizontal maladjustment of investment in single branches of industry). It is also assumed that the workers increase sufficiently to service and to finish the newly produced capital goods.⁵¹

The results of this savings process follow. The net production (which Pio calls A) consists of nine-tenths consumption goods and one-tenth production goods, which are sold for 900,000 and 100,000 krs., respectively, and the production costs incurred are thereby completely covered. No disequilibrium appears. The following year when the savers return the 10,000 krs. to consumption use, the old net production (A) is produced solely as consumption goods. But there has been an increase in production over A, so that the new production is A plus one-fiftieth of A. Corresponding to this increase is an increase in income which goes to both the new laborers and the savers, and this increase is just sufficient to purchase the increase in production. If the laborers and savers use this additional income for that purpose then there is no disequilibrium, no underconsumption.

Assume, however, that the savers decide to consume the whole of their original incomes, 10,000 krs., and to save the increase in incomes. The results of this decision are: In the second year there will be produced under technical developments somewhat more than A plus one-hundredth of A consumption goods (and inversely somewhat less than one-hundredth of A production goods, and also a greater quantity of consumption goods than what is demanded at a price which covers their costs of production, because now there is a constantly rising complex of production goods which uses only one-half of its increase to produce consumption goods, while the other one-half is used (constantly) to produce goods. The surplus of consumption goods becomes greater as the savings program goes on, and there is a state of continuous disequilibrium.

Certain aspects of this thesis of Pio's have already been treated in a previous chapter. It need now only be pointed out that Pio fails to understand that capital goods are produced by

⁵¹Ökonomiske Depressioner, pp. 43-48.

both labor and capital and, furthermore, he does not understand the relationships existing between these two agents of production. He also sets up assumptions so simple that it is virtually impossible for him to develop anything but an emasculated approach to a theory of value and distribution; he thus disregards entirely what will happen to prices of goods and services, to the prices of labor, and to the prices upon capital; in no way does he note the changes which will take place in value productivity; and perforce he does not treat with any of the aspects of changes in incomes. What he really argues under the assumptions made by him is that hoarding has taken place.

Birck states that the ceteris paribus attack made upon the problem of cumulative savings is meaningless, for all things are not equal. He holds that with the increase in savings and the resulting increase in capital there is a change in the relationship between capital and labor, so that the "monopoly" position of capital is broken. The interest rate falls and the wages increase, and thus there is a definite re-allocation of income, to the extent, most likely, that the increase in consumption goods is taken off the market. Birck does not develop what will happen to prices for such goods. It should thus be added that the extent of the decline in the interest rate depends upon the rate of accumulation (the ratio of the capital coming into existence to that already in existence). The rate of accumulation will be relatively low, especially in a society where the accumulation has been great. The important element really is the effect that the increased production has upon wages, for in the case of labor there is in a strict sense no accumulation possible. In any event the relationship between wages and interest may change greatly, and with the lowered costs of production resulting from the increase in production (at least for the time being) and lowered prices the product will be removed from the market, under the assumption of certainty and flexibility (the conditions stated by Pio).

Birck.--Birck develops a form of overproduction theory which is definitely the forerunner of the sophisticated theory of the modern German socialist school. Savings brings overproduction only when it results in the production of machines which displace labor. Here is a distant relative of the earlier Marxian theory. According to this theory, if the new machines bring about

the same production as before but with fewer laborers (he assumes with half the labor as before) and if the capitalists do not take up the consumption dropped by labor because of reduced income, but save, then a situation of underconsumption appears. Hereby, obviously is made the assumption (tacitly) that friction is present in the form of the inability or unwillingness of the workers to accept wages equal to their marginal products. Birck, however, states that after the discovery of such a machine there is usually a period of transition and readjustment, after which the workers are again employed, usually at higher wages.

Hence, according to him, the real problem is primarily a lack of capital. (His use of the term capital is quite confusing; it is difficult at times to say whether he means by it savings or deposit creation; it is presumably the former since he speaks of capital formation as being a relatively slow process.)

I am in agreement with Wicksell that the result of savings, if we have in mind the creation of real capital, is of benefit for the worker; and I might further add that an automatized technique which is not accompanied by a corresponding increase in capital is pernicious, since the workers are made breadless, their purchasing power destroyed, since the production power exceeds the effective consumption. [Here he is concerned with the "actual" savings process.] Gradually, the higher technique puts away its pernicious influence, since it creates gradually new capital; however, the worker suffers under the process of capital formation, and the new formation of capital does not take place without the periodical market stagnation cited by Pio.⁵²

In other words, since the entrepreneurs will not consume the added product caused by the unemployment of the workers, and since the savings process is very slow, a situation of overproduction (as previously defined; goods can only be sold at prices unfavorable to the producers) appears. That is, the entrepreneurs should either consume what they would save, or else produce sufficient capital goods to put all the workers back to work. If they do neither, then there is underconsumption.

Warning.--As is the case with the majority of cycle theorists Warming presents no definite theory of the cumulative movement upward. He does, however, develop certain phases of an investment process which he for some undecided reason has called a speculation process. Once the equilibrium has been broken, or once upswing has been started from the bottom, there appears spec-

⁵²Technischer Fortschritt und Ueberproduktion, pp. 15-16.

ulation in goods, buildings, and in business enterprises. The retailers, expecting a continuance of the price rises proceed to lay in stores of goods, thus forcing up the prices to a new height. Many of these purchasers of goods fail to give much thought to the future conditions with respect to prices and there is brought about a kind of "speculation" that is comparable to Davidson's "illoyal" speculation. When this process of development continues for some time, then there appears a building scarcity, and investment in new homes takes on force. However, the main source of the development is the investment in business, which takes on several forms: (a) the changing of proprietorship enterprises into corporate undertakings; (b) mergers; (c) new undertakings; and (d) expansion of the old. The funds necessary to this general expansion program are obtained from the sale of securities, from savings which increase with the upswing, and from the banking institutions. The process becomes "hurtigere og hurtigere"--faster and faster--by description.⁵³

Warming does not show why this investment process should become faster and faster; he does not develop how the new savings appear (although he does show, correctly, that savings are not stored up during the depression); nor does he show the changes in the income structure and how these changes affect the investment process.

In concluding this chapter on the cumulative movement, it need hardly be said that there is much to be done to develop further this phase of business cycle theory. Even in the land of the origin of the famous Wicksellian cumulative process, there is felt a great want as to various elements in the theory. Myrdal, Lindahl, Pedersen, and the many others have all pointed to the need for continued study in the problem of price relationships, the measurement of the rates of reaction of prices and economic forces, and the general theoretical problems of income. These desires can only be slowly fulfilled as the whole body of theory and of empirical knowledge grows.

⁵³Gode og daarlige tider, pp. 41-48.

AN APPENDIX TO CHAPTER XI

Some Aspects of Inventory Accumulation

Although inventory accumulation need have no direct bearing upon the cessation of the cumulative process upward and the reversal, it nevertheless holds a certain theoretical significance for the analysis of this stage of the cycle. The subject has proven to be rather controversial in Scandinavia and the major portion of the writings is too unsettled to devote much space to an examination to it. A few of the findings will be merely indicated.

Gustav Akerman.--Akerman shows two situations which hold for inventory accumulation. If the interest rate is low, then there should be a tendency for the entrepreneurs to accumulate inventories. If prices are high or on the upswing then there may be a tendency to accumulate inventories for speculative gain. These two viewpoints, however, are opposed to each other and it may be, therefore, difficult to determine what applies with respect to inventory holdings during the high conjuncture and at the time of the reversal of the cycle downward. Akerman contends that it all depends on the commodity. It would seem that the holding of raw materials is a definite function of the rate of interest, but for processed goods the price of them is more a controlling factor than the interest rate. Hence, during the upswing raw materials and goods-in-process inventories will behave differently from finished and consumption goods inventory, and speculative possibilities may cause inventory accumulation in spite of a rise in the discount rate for certain categories of commodities, tending thus to stimulate the cumulative movement. As soon as the expected price rise is met with and no longer any further price rises are anticipated, then the entrepreneurs will stop accumulating inventories and herein lies the explanation of the precipitous reversal.

There is a difference, however, between the actions of the processers and the middlemen. It is the latter who are first affected by a price decline or by the anticipation of a decline and, therefore, stop to accumulate inventories. The processers, be-

cause of fixed plant and equipment, continue to produce for a time after the inventory accumulation ceases in the other bracket. But eventually they are forced to cease operations because of the high discount rate.

In the case of consumption and finished goods, Akerman contends that the maximum inventories appear shortly after the reversal of the upswing.¹

Johan Akerman.--According to Johan Akerman there is a large stock of finished consumption goods on hand at the reversal of the high conjuncture, but there is a scarcity of raw materials and goods-in-process within the capital goods producing industries. It is Akerman's position that herein lies the "real" cause of the "crisis."²

In his Lectures Wicksell holds that inventories decrease with the upswing and are at a low point at the reversal. It is most probable that he has in mind inventories of raw materials and goods-in-process.

Pedersen.--As has been stated earlier, Pedersen regards inventories as evidence of economic inflexibility and hence he would place causal emphasis upon friction rather than upon the storing up of goods.

¹"Varulager och prisrörelser," Ekonomisk Tidskrift, XXV (1923), 241 ff.

²Om det ekonomiska livets rytmik, p. 73.

CHAPTER XII

THE CESSATION OF CUMULATION AND THE REVERSAL

It has already been stated that there is not to be found a suitable term for the definition of the reversal of the cumulative movement upward, the point at which "good times" turn into "bad times." In the Scandinavian theory of the business cycle "crisis" is used sometimes to designate this phase of the cycle, while at other times "crisis" refers to the whole cycle. For want of a better descriptive term, therefore, the expression "the cessation of cumulation upward and the reversal" shall be used to characterize this phase. This expression also facilitates the presentation of theory for it is sometimes difficult to distinguish the forces which have retarding powers upon cumulation from the effect of these same forces.

A. Technology Theories

1. Inventions, Discoveries, and Improvements in Technology and Production Methods

Of the more numerous theorists who were first included in this section only two remain, Gustav Cassel and Gustav Akerman. Now that the reversal phase of the cycle has been reached it is discovered that neither of these two should really be continued as pure technology theorists treating with new inventions, discoveries, improvements in business methods, and the like, for both of them become overinvestment theorists in order to explain the appearance of the turning point of the cycle. However, since they still adhere to general aspects of technology relative to production of capital goods their theories will be continued in this section.

Cassel.--Modifying factors of the cumulative movement upward are the rising prices for the raw materials of manufacture, which especially enter into the production of capital goods, and

the rising wages.¹ However, the really important factor is the lack of capital. The collapse of the boom is brought about by an insufficient amount of the production factor called waiting.

This lack appears not only in the difficulty of obtaining loans but also in the difficulty to find purchasers of the product of the capital. He who purchases a house or pig iron expects in reality a certain amount of waiting. But if this factor is scarce, then there becomes a scarcity of such buyers, and the prices on capital fall.²

Cassel adds that the lack of waiting appears because no one will take over the existing real capital, not because there is disbelief that the good will yield the expected return, but just because there is no one who will wait. This latter statement amounts to mere quibbling about the risk element in the situation; the important point, however, is the emphasis which he places upon waiting and its lack. What has happened is that during the later part of the cumulative movement the production of capital goods has been greatly accelerated relative to the increase in capital funds or savings. In the expansion of the production process the entrepreneurs have overestimated the supply of such funds.

Thus as far as the explanation of the appearance of the reversal is concerned Cassel may be classed as an overinvestment theorist in the sense that the investment process in capital goods has been carried too far relative to the available funds necessary to complete those goods or to allow for the purchase of the product which is now produced by those goods. This position is obviously in opposition to that of the oversavings theorist who contends that the reason for the failure of the process is that the income groups of the economy did not have sufficient funds to purchase the product of the new production apparatus brought about by the accelerated investment process. Cassel makes a point in this connection which has been overlooked by numerous critics of the oversavings or underconsumption theories. That point appears in the above paragraph when he states "He who purchases a house or pig iron expects in reality a certain amount of waiting." The underconsumption theorist would contend that the reaction comes from the demand side, that the new investments are excessive relative to the demand for the product. Cassel's argument should

¹The Theory of Social Economy, p. 641.

²"Om kriser och dåliga tider," op. cit., p. 69.

show that the reaction may originate on the part of the supply side and then spread to the demand side, for with the inability of the producers to obtain no longer credit that means curtailment first of production which in turn results in the lay-off of labor and from then on it becomes a matter of lack of income. That this explanation seems to be the more rational of the two would rest on the fact that after all it is the investment process which has in the first place brought about the shifts in income and that the incomes and their increase are a result of the investment process. The underconsumption theorists in order to find support for their thesis should argue that due to inflexibility of the economy wages never caught up with the marginal productivities of labor and when the product of the new investment process came upon the market total income as yet had not grown to equal total product. Then the values of the new investment would have to be adjusted downward and hence the production of capital goods would fall off. But there is no evidence that retail prices fall first, thus reflecting the lower (relative to production) purchasing power of the income groups. Therefore, in order to establish their position with respect to the curtailment in consumer buying, the underconsumptionist must show that there appears a tendency to a stocking up of inventories at the top of the boom. Here, again, there is but little evidence. The validity of the theory of the underconsumptions comes to rest entirely upon the measurement of the degree of friction which causes the prices and wages to act as they do, and under those circumstances almost any theory of the cycle becomes valid.

There are real reasons for thinking that wages on the other hand have been driven to excessive (possibly beyond the margins of productivity) heights during the boom, especially under modern-day trade union activities. What is also conceivable, as an accompanying or a resulting factor of the scarcity of labor, is that diminishing returns have set in for a great number of single enterprises, causing their managers under the high cost of credit that develops during the top of the boom to curtail the investment process. The managers find their marginal costs growing relatively more rapidly than their marginal revenues and, unless some new machines of highly automatized techniques may be introduced, the investment program is first slowed down, then when the reduced incomes are beginning to make themselves felt, the program may be

almost completely stopped or else entirely stopped. These aspects of diminishing returns are always suggested by those theories which emphasize the power of high costs to curtail the boom.

Gustav Akerman.--As the production of the product, automobiles, under the improved technology reaches the point where it satisfies the demand at that point on the demand curve to which the price fell with the reduction in cost, then the production of cars for new sales comes to an end, and the production of replacement becomes the only form of production. In other words, what Akerman means is that when the market saturation point is reached, then production settles down to the level of replacement production alone. What has resulted is of course a case of horizontal overinvestment, coupled with vertical overinvestment.

When the production of new automobiles comes to an end in that industry, that industry suffers a general curtailment which presumably spreads to other industries built up to support the expansion, e.g., steel, glass, gasoline, etc. Such developments contain within them the varied aspects of the Clarkian acceleration theory of cycles, in which it is propounded that the reduction of the demand for a consumption good is accelerated backwards upon the production goods which take part in the production of that consumption good.

2. Superiority of Large-Scale Production

Brock.--It has already been shown that Brock finds the cause of periodicity in the fact that under competitive (free) conditions the entrepreneurs are continually expanding because of the superiority of large-scale production and hence the demand for capital always runs ahead of supply. Into this situation Brock introduces credit as a facilitating device, but he does not establish any advanced conclusions therewith. Under expansion and, hence, with a "lengthening of the roundaboutness of production" a decline in real wages takes place and thereby there appears extra profits on capital, making the expansion immediately cumulative if the profit increase is greater than the loan rate.

But when does this cumulative movement come to an end?

Brock's answer follows:

We have seen that the real basis for the hausse lies in the fact that as a result of displacement in the productive forces of labor there appeared a relative scarcity of consumption goods, and we can therefore understand that what later brings

the hausse to a close is the cessation of this displacement. . . . This cessation can hardly be regarded as caused by a price rise . . . because such a price rise should according to any analysis have as the nearest result a greater displacement of labor power and hence an even greater and more violent hausse. [Herein Brock's reasoning becomes slightly garbled.]

There remains therefore nothing else than to assume that the cessation of the above-mentioned displacement of power depends upon an increasing difficulty to obtain more labor during the upswing; and it is in this growing scarcity of labor . . . that we find the cause of the turn from the hausse to the baisse.³

Brock further contends that "monetary" theories hold no explanation of the reversal. "As far as our modern crises go, the difficulties within the credit system are to be regarded as a direct result of the receding conjuncture rather than its cause."⁴ He makes this contention in spite of the fact that he depends upon the credit system for the means to permit the displacement under consideration.

A number of Scandinavian writers have made the scarcity of labor one of the limiting factors of the cycle, but Brock is the first to make it the sole factor which brings the reversal. No doubt this contention is to a great extent justified for, after all, capital goods are freely reproducible, whereas labor is not. Nevertheless, the monetary system must be looked to for some effect upon the limitation of expansion, since it is an impelling force which may set the cumulative movement into motion and since it cannot be indefinitely expanded. In other words, it is impossible to regard the monetary and banking system as given over entirely to the financing of "self-liquidating commercial transactions" which create their own reserves, as Brock would seem to imply. That system may too be causal. Brock, however, does not overlook entirely the use of the discount rate as a possible means of regulation of the cycle and, hence, he does place indirectly some value upon credit expansion and contraction as a causal element. His chief fault is that he has a pet theory which he must expound, regardless of what other theories may have to say.

3. Capital Replacement Theory

According to Schønheyder that fact that a capital good once produced lasts a long time is the reason why the upswing does

³Op. cit., pp. 225-26.

⁴Ibid., p. 228.

not continue indefinitely. The cycle is a function of "reinvestment of amortized capital," and not necessarily of new investment. The capital goods wear out after a series of years, then must be replaced. This assumes that a representative section of the capital goods structure is built at about the same time and that the depreciation is the same or approximately the same. The reason which Schönheyder gives for an accumulation of reinvestment to take place at a given time is that inventions and discoveries are irregular in appearance and that the producers will usually defer replacement until a more opportune time.⁵

The reason why the upswing comes to an end lies in the fact that there is a lag between reinvestment and new investment. In other words, reinvestment, because of the durability of capital goods, does not follow new investment and therefore, there eventually appears a displacement of reinvestment with respect to new investment.

It may be argued the reinvestment has particular bearing upon the force of the upswing and that Schönheyder's hypothesis on that score is tenable. But since it is impossible to attach any meaning to durability of capital--even if Böhm-Bawerkian concepts be applied--it is impossible to ascribe any meaning to a theory purporting to explain a cyclical movement upon fluctuations arising from replacement of capital in the physical sense. Furthermore, it is virtually impossible to distinguish new investment from reinvestment.

Agreement with Schönheyder may be indirectly reached on one score. In an economy in which savings from year to year varied but little, it may be possible that the major portion of production of capital goods would consist not of goods bought by savings coming on to the market but rather by entrepreneurs to replace worn-out machines. And such replacements may be exceptionally great from year to year in an economy which had a great accumulation of capital. It is only from this standpoint that the "new investment" may be accredited but little importance to the explanation of periodicity. Otherwise, Schönheyder overlooks completely the price-cost relationships which motivate economic behavior and the credit expansion powers of the economy.

For any entrepreneur the investment process is not a prob-

⁵"Produktionscyklerne og kriserne," op. cit., pp. 104-15.

lem of replacement, it is a problem of the proper proportions of labor and capital relative to the effect such proportions will have upon marginal revenue and marginal or differential cost, as well as upon unit cost.

B. Theories of the Errors of the Exchange Process

It seems to be the general consensus of opinion in the Scandinavian literature that no theory which is based entirely upon uncertainty or the psychological can be complete. The speculative and psychological factors enter in, therefore, not in a direct, causal sense, but rather as stimulatory to whatever movement that may be in progress. Thus the psychological factor may be an accelerating element in either the cumulative movements upward and downward or in the reversing phases of the cycle.

Davidson.--Davidson ties up uncertainty with a monetary analysis of the cycle. One of the accompanying features of the cumulative movement upward is "illoyal" speculation, which appears as an accelerating factor. When these speculative forces break down then they stimulate the reversal forces of the cycle.

Akerman.--This writer presents a viewpoint which has anticipated the modern liquidity-preference theory. At the reversal the individual members of the economy place greater value upon present goods than upon future goods. Uncertainty makes for a rush to get into a cash or a near-cash position. "A reversal in the general public conception of the relationship between present goods and future goods can conceivably take on such a forceful aspect that the movement may be said to obtain thereby a new base."⁶

At another point Akerman states that the psychological factor is one of the important elements which causes the cycle to deviate from the basic pattern as established by savings and progression.⁷

Warming.--Warming treats of the stimulating effects that speculation may have upon the movement upward, but he does not show how under this influence the movement comes to an end, but is forced to introduce other factors.

⁶Konjunkturteoretiska problem, p. 25.

⁷Om det ekonomiska livets rytmik, p. 222.

C. Credit and Savings, Overinvestment
and Oversavings Theories

Since the majority of the Scandinavians present a theory evolving out of capital accumulation it is only natural that the turning point in the cycle be treated from the capital side of the cycle problem. The original relationship between consumption goods and production or capital goods has been changed, but how does this change affect the economic processes?

The earlier consumption-production goods relationship produced a certain quantity of consumption goods and there obtained a fair stability between consumption and production and gross income (Ohlin's notation) remained comparatively stable. When the capital accumulation process is sped up under the cyclical movement upward, does that process come to a new equilibrium with a new consumption-production goods relationship and stable gross income, or does it develop into some state of maladjustment which must slowly be corrected? These are the questions which must be answered in the analysis of the crisis or the reversal of cumulation.

However, since a reversal of cumulation is spoken of, then a condition of maladjustment must be presumed. The question then becomes: Does the answer lie in the premise? The answer to this question must be in the negative, for not a single business cycle theorist treats the end of the cumulative movement upward as the appearance of equilibrium. Obviously, if equilibrium should appear at that time there would be no problem of the cycle. It is small wonder then that the majority of the cycle theorists have given most of their thought to the explanation of the reversal movement, and for that reason many of the cycle theories have come to bear the name which comes from the way the theorist has attempted to explain the reversal. The cumulative movement upward must, according to these theorists, result in a stage of maladjustment or disequilibrium, which cannot be regarded as stable since readjustment must set in.

There seems to be three different reasons given why disequilibrium appears and why the new combination of the agents of production leads to an imperfect consumption-production goods relationship. The first is that there is overinvestment in the sense that a major industry (including satellite enterprises) is

overdeveloped relative to the demand curve for the product (the writer has named this form of overinvestment "horizontal"). The second is that there appears a scarcity or lack of capital which brings the end of the cumulative movement (this grows out of a situation which the writer calls vertical overinvestment, in which there takes a general growth of capital but getting out of line relative to the other agents of production). The third and final reason states that the capital goods structure has been pushed out of line relative to the consumption powers of the system so that there is too much capital in the sense that the consumers may not be able to buy all of its product (in one way this too may be called a vertical displacement of the capital goods structure, but the oversavings theorists contend that the displacement is relative to the growth in income and not to the agents of production).

This section is to treat, therefore, these three reasons why the crisis or reversal appears; no attempt will be made to segregate the theorists advancing the first two, since both of them are rather closely related, since they fall back, both of them, upon the credit and savings system in order to induce the cumulative process.

1. Overinvestment Theories

Wicksell.--Distinction may in this instance be drawn between his "conjuncture theory" and what should perhaps be termed his "short-run theory of money." The distinction may seem uncalled for, nevertheless, Wicksell does draw up a separate cycle theory.

Conjuncture Theory:

The constant increase in population necessitates not only that the new members of the populace be engaged as well as the old, and it not only necessitates a capital increase which corresponds to the increase in population, but it also requires a continual development of new means of production, i.e., continual technological improvement. The question now becomes, can these technological improvements present as even a growth curve as the population! It is impossible to conceive of their introduction without disharmony.

This growth of technology is at certain times acceleration, at other times reduced in speed. Since the introduction of the new means of production is closely associated with the conversion of circulating capital into fixed "real" capital, it is only natural that the growth of the economy be in waves.

If the technical improvements have been placed in use and there are no others to be found to which we may resort, at least there are none the worth of which is established or which promise profits exceeding the margin of risk bound up with all new enterprises, then there appears what we call a depressed condition or a period of business stagnation . . . , capital is now preferred in a liquid state.⁸

To explain the appearance of the crisis Wicksell adopts the Spiethoffian theory of lack of capital. He does not, however, develop any of its aspects to an extent which allow a tie-up between the overinvestment theory thus presented and the short-run theory of money.

The short-run theory of money.--It was not Wicksell's intention to make his theory of the relationship of money to prices the short-run theory which nowadays has become known as the Wicksell theory of the cycle; yet how it could have become otherwise would indeed be difficult to say. At the same time it would indeed be difficult to see how the short-run theory of money of Wicksell could apply to cycle theory without the thesis of his "conjuncture theory." Spiethoff, Cassel, and Akerman have all been more or less apprehensive on this score. That is, it is almost impossible to relate the monetary approach directly to the prices of consumption and capital goods without bringing in the growth of capital under technological improvements, when the cycle is to be explained.

Under this theory, presumably a reversal in the Wicksellian cumulative process takes place when the "difference rate" is unfavorable, i.e., when the "natural rate" is no longer greater than the "loan rate." For Wicksell, the primary causal element is the "natural" or "real" rate. It must be noted, however, that in his Geldzins und Güterpreise, Wicksell posits that if the loan rate should be brought up to the natural rate, then equilibrium will appear with higher prices and higher wages, under the conditions assumed by him. He does not, however, develop how this equality will be established. He notes later⁹ that if more realistic conditions be introduced, then prices may themselves become causal in the sense that a rise in them will stimulate the entrepreneurs to increased activity, especially under a continued low rate by

⁸"Krisernas gäta," Statsökonomisk Tidskrift, XXVII (1907), 265.

⁹Föreläsningar, pp. 183-84.

the banks.

In the last edition of Forelesningar, Vol. I,¹⁰ he presents a limiting factor upon the cumulative movement based upon a clearer understanding of marginal productivity theory than formerly. Therein he holds that the marginal utility of the saved "land power" (jordkraften) and the saved "labor power" (arbetskraften), i.e., the marginal utility of the available capital funds rises, while the marginal utility of the real capital, i.e., the capital invested to bring future products, falls to the extent that the production becomes more and more capitalistic. Eventually, it would follow, the cessation of the production of capital goods takes place and that is when the marginal utilities of the two goods are equal. Of course, this hypothesis does not explain why disequilibrium appears, it merely points out that there may be a stop to the capital cumulation process. For the most part, Wicksell felt that a cumulative movement would come to an equilibrium position, but it must not be forgotten that he was developing a long-run theory of money.

It should be added that all too many theorists overlook the importance of the utility analysis in their cycle theories and they would do well to study this portion of the Wicksell capital theory.

Davidson.--The analytical method used by Davidson places him in a category by himself. At no time does he attempt to present a systematic cycle theory, rather his major concern is always that of the application of monetary theory to specific situations. He contends that the necessary elements in each case must be discovered before the relationship between phenomenon may be established. Consider, e.g., his analysis of the crisis of 1929 in America.

In the first half of 1927, the United States received a considerable quantity of gold. But instead of sterilizing this amount, it was allowed to enter as reserves for further note issues at the Reserve Banks. The Reserve Banks could have carried through a program of open market operations to prevent the absorption of the gold, but because of the decrease in business activity which became evident in May, an easy money policy was pursued to bring back business. But the business world did not take to the

¹⁰P. 160.

credit expansion, and the funds made available went into the stock market.

However, this exposition is not intended to convey the idea that this decision in itself, isolated from contemporary circumstances, caused the crisis. An event even of the same kind and degree has different effects according to those conditions under which it appears with other events.¹¹

What happened in this case was that the stock market was extremely sensitive to almost any form of impulse. In such a case, the lowering of the discount rate operated directly to bring about a rise in the market. Since business did not absorb the expansion, the stock market did, which was in a position to bid for the funds at that time.

The crisis presumably appeared when the funds were withdrawn, the action being stimulated, however, by the breakdown of "illoyal" speculation.

This theory that the stock market took funds away from business is highly controversial and it has long been the source of a great number of debates. To enter into an examination of the validity of it will take considerable time and it is therefore dropped with this observation: it is impossible for the stock market to bring into its sphere of activity a considerable amount of funds which are in a sense idle; that is, even as in business, because of inertia and frictional elements funds will lie unused in brokers' offices, especially during a rising market when operators and bulls will be waiting for opportune buys and not carrying through purchases without some time lag between purchases. When there is a great volume of trading it is conceivable that funds so tied up may become very large.

In another sense the stock market allows for an inflationary price rise of consumption goods. With the appreciation in values of stock held by the bulls, the margin requirements may be eased off and the result is that the credit balances of customers at brokers' offices grow to great proportions and many of the customers borrow against these balances for expenditures upon consumption and luxury goods. Much has been made of this latter point. Its validity, too, is debatable. Nevertheless, there is considerable plausibility about it.

Myrdal.--Since Myrdal treats primarily with monetary policy

¹¹Op. cit., p. 229.

and presents only a modified short-run theory of money, the reversal phase of the cycle is not developed by him. There are, since he presents the Wicksellian doctrines, certain aspects of the monetary theory, however, which lend themselves to such interpretations as would permit the presentation of that stage of the cycle. These have already been expressed in the analysis of Wicksell's approach, but Myrdal gives some modifications which call for their restatement.

If profit on investments appear, then equilibrium is broken. The entrepreneur sets his expenditures on investments (real sense) against the capitalized value of the future income, properly discounted and weighted with proper coefficients of probability. If the expenditures are less and continue less than the capitalized value derived, then the movement upward continues. And it presumably continues until the profit disappears.

There is one matter which Myrdal never fully makes clear. If a cumulative movement once gets into action, he does not state what will happen when monetary policy is invoked in order to bring about stability. Should this cumulative movement continue for some time before monetary measures become effective, it may be questioned that such monetary measures can under most circumstances restore some kind of stability. Myrdal does allow for growth in the capital structure through a price level which is not held perfectly stable and one which is not made up of raw material, capital goods, and similarly sensitive prices, but even under those stipulations it is still possible for a reverse action to set in, because the monetary sphere of jurisdiction may at times be extremely limited. This last point Myrdal would admit. On the other hand, it is not conceivable that monetary measures would in any way affect or influence the conditions growing out of a horizontal displacement of the investment process, since, to attempt such measures under those circumstances would in all probability lead to a general form of investment displacement. Consider, for example, directing monetary measures to control the overinvestment in agriculture, where the horizontal or structural displacement has been very great.

There is still another possibility. If a vertical displacement in investment has taken place and monetary policy is directed to effect a restoration of stability, may not such measures bring about so severe reactions at times as to set in move-

ment a cumulative downward? If capital goods and semidurable goods industries have been in movement upward for a time, credit restriction for these industries will lead to a form of curtailment which may have widespread reactions, especially upon consumer income and upon the activities of satellite industries. It is suggested that such a course of events may appear even though a complete Wicksellian movement has not taken place.

Then, perhaps, these criticisms of Myrdal are not wholly justified, for he does admit the possibility that at times certain kinds of price stabilization may be in direct opposite to conjuncture stabilization. Therefore, he suggests the use of a price index of inflexible prices but weighted according to their significance in rentability for the enterprises concerned. And he points out, that to begin the stabilization of such an index at a time as now when there has been in movement for several years a Wicksellian cumulative movement downward would be to invite ruin. First, it would be necessary to re-establish capital values and to raise prices to such levels as will allow for such a re-establishment of values.¹²

Another point to Myrdal's credit is that he shows that monetary policy directed to the achievement of single norms--e.g., the stabilization of employment--merely leads to the stimulation of cumulative movements in other directions. In this connection Myrdal develops several situations which are of particular importance for modern-day monetary policy. They will be treated in detail.

The first situation.--Assume (a) that wages are the only prices which have a reaction-time greater than zero relative to the effects of monetary measures; accordingly a constant wage would be an equilibrium condition; (b) that wages are the only prices which may be monopolized; (c) that the monopolization is restricted to the supply side of labor; (d) that there is central bank which has the powers to establish monetary equilibrium; and (e) that monetary equilibrium holds at the moment. Let it further be assumed that equilibrium obtains when unemployment is equal to zero. Now let labor be organized so that a monopoly appears as with respect to the supply side.

In order to establish monetary equilibrium, it will now be

¹²"Om penningteoretisk jämvikt," op. cit., p. 290.

necessary to raise the remaining prices to the same extent that the unions force up wages. If that is possible then no unemployment will appear. This will happen if it can be assumed that in the case of all relevant schedules of anticipations this adjustment could take place and without a lowering of the interest rate. Myrdal points out that this is not possible under the kind of monetary policy postulated, namely, that the monetary policy is generally known.

The second situation.--Assume that the employers, too, organize and monopolize the demand side. Then monetary equilibrium cannot appear without some unemployment.

The third situation.--Assume, however, that the anticipation schedules are not immediately adjusted upwards as in the first case, while yet the loan rate is not lowered. Now the equilibrium equations are no longer satisfied and a Wicksellian process downwards will be started, characterized by a readjustment of production resulting in less production of real capital, unemployment, and price declines, first in real capital industries and then in consumption goods industries. If, however, monetary policy is directed to curb this cumulative movement then its purpose will be to prevent the appearance of other unemployment than what would appear as corresponding to the degree of monopoly intensity, i.e., that unemployment which the workers would tolerate in order to achieve a monopoly position. (It must be understood, if this writer's interpretation of Myrdal's theory is correct, that the unemployment referred to above in the cumulative process downward is made up of voluntary and involuntary employment, the latter in the sense that the cumulative process initiated by monopolization also forces other unemployment.) What appears under this program is, if the central bank is fortunate enough to curb the movement by a relatively small drop of the loan rate, a new equilibrium situation which is characterized by relatively higher wages, a certain amount of unemployment, a lower rate of interest (if there is no readjustment of the savings program of the economy), relatively lowered incomes for the capitalists, somewhat changed price on consumption goods and real capital goods, and redirected production. The extent to which the cumulative will continue before being curbed depends upon the effectiveness of the monetary policy invoked. The easiest way out would be to stabilize the prices monopolized by labor.

A final situation.¹³ If the more realistic assumption be made that other prices than wages do not have an infinitely high rate of reaction, then the reduction of unemployment to the minimum stated would be no longer possible under the proposed monetary policy, even if the whole price system be allowed to move upwards. Any attempt to stabilize will result in a cumulative process upward and this process will not be stopped as long as the unemployment is held down below the level which corresponds to the long time intensity of monopoly.

Myrdal comes to the conclusion, therefore, that the presence of monopoly elements within the price formation process so causes that monetary equilibrium cannot be maintained other than under a condition of some degree of disequilibrium between supply and demand for goods and services; the deficiency which will always result is the minimum cited above. Here is a finding which those advocates of stabilization of employment overlook. It is also a finding which others disregard in setting up price level criteria for stabilization programs. It is this element which leads Myrdal to suggest the price level finally devised by him.¹⁴

Lindahl.--Since Lindahl develops only the theoretical aspects of expansion and contraction, he does not show how a stage of crisis develops out of the expansion process. It may, however, be inferred from his almost purely monetary approach to these phases of the cycle that contraction is brought about by a realization of the entrepreneurs that long time investments are no longer as profitable as formerly and should a bank rate be introduced which is higher than before, then the reversal of the expansion process sets in. To draw any further inferences would be unfair. It is conceivable, however, that Lindahl would place considerable weight upon entrepreneurial anticipations as to the future of prices and rentability.

Johan Akerman.--Akerman follows the usual Wicksellian analysis with respect to the appearance of the reversal in the cycle from expansion to cumulation downward in that he emphasizes the importance of the "difference rate." The chief factor in the

¹³There are others, but these cited will serve to establish some of the problems involved.

¹⁴These observations and excerpts are taken from pages 245 to 252, "Om penningteoretisk jämvikt," op. cit.

reduction of the difference rate is the increase in the cost of production, due primarily to the catching up of wages with prices and to the increase in the raw materials of production.¹⁵

In another sense, Akerman is a lack-of-capital theorist. He seems to be almost wholly in accord with Spiethoff, Cassel, and Robbins, who find that with the growing cumulative movement upward there not only develops a scarcity of the materials and agents of production, but also of "circulating capital." This scarcity of circulating capital is tied up by Akerman, however, with the heavy demand for credit in the fall of the year, so that under such intensified demand for capital the crisis usually appears under such a combination of circumstances that the loan rate has been forced above the natural (or profit rate, according to Akerman) rate. This scarcity of capital or savings has been given so great weight by Akerman in fact that he has advocated the enforcement of savings by the economy during the period of the rising scarcity of funds. By this he does not mean "forced savings" in the Hayekian sense of the term but, rather, he wants to impose upon the members of the economy an intensified savings program. Herein he is quite naive.

Brisman.--Brisman is critical of the usual explanation of the appearance of the reversal: bank reserves at the minimum and a high discount rate bring the change. Because, he adds, some crises have come without any seeming association with bank reserves and discount rates. The explanation of the reversal must, therefore, call for added factors.¹⁶ (Brisman wrote this criticism in 1923, however, it would most certainly apply under an analysis of the causes of the reversal in 1929, for at that time the Federal Reserve System's reserves for all reserve banks were far from the minimum prescribed by law.) Manufacture is capable of a form of expansion which is not possible in agriculture. Hence, there may develop a growth which becomes cumulative when it is aided by the inflation of bank deposits. Limitations upon such growth rest in scarcity of labor, in particular. (Cassel's position is referred to by Brisman.) Related to the bank expansion of credit and to the price rise upward are the psychological elements of inflation which are cumulative, i.e., the public in gen-

¹⁵Om det ekonomiska livets rytmik, p. 238.

¹⁶"Konjunkturväxlingarnas orsaker," op. cit., pp. 116 ff.

eral expects the price rise to continue and these expectations work hand in hand with credit expansion to force prices higher and higher. When prices are no longer promising, that is, relative to costs of production then the entrepreneurs contract production for such a time as will bring about a reduction in the costs.

Brisman's is thus almost a strict inflation and deflation theory of the cycle, even though he refuses to give full weight to the expansion and contraction of the banking system.

Ohlin.--Ohlin has presented at various times parts of a theory of the cycle, parts which are far from complete and far from being closely drawn together into a whole theory. Therefore, it is necessary at such times to attack his theory on an inferential basis.

It is thus to be inferred from one article¹⁷ that he does not consider the business cycle a phenomenon of inflation and deflation as does Brisman. Rather, it is possible that each phase of the cycle must be analyzed separately, giving attention therein to the peculiarities of "economic situations." He expresses himself as being quite sceptical about the contention that the depression is a necessary correction of the errors of the upswing; and asks: Why should not investment activity during the depression with its unmeasurable pessimism be at error as well as during the upswing?¹⁸

This somewhat startling attitude (startling to the general run of theorists, at least) places Ohlin in a somewhat different category than the usual lack-of-capital theorists, almost all of whom advocate that the crisis comes as a lack of funds to finish the investment begun in the upswing, while the ensuing downward swing must bring correction so that savings may again later start to accumulate. Ohlin would hold that the crisis may appear as a result of overinvestment or mis-direction of capital but he asks: may not such mid-direction have taken place in the preceding depression as well as in the upswing following. Therefore, why there should be instituted a corrective movement of prices and costs is a question which to him has no meaning.

¹⁷"Ungelöste Probleme der gegenwärtigen Krisis," Weltwirtschaftliches Archiv, XXXVIII (July, 1932).

¹⁸Ibid., p. 2.

Capital misdirection appears when the entrepreneurs, who may be over-optimistic, make commitments with respect to capital goods at what they think is the correct rate of interest, and later on discover that an entirely different rate applied when such commitments were made. ". . . the over-optimistic entrepreneurs invest the available savings-capital in a technical form which would call for an adjustment to rate J_1 (the equilibrium rate) instead of to J , which was actually chosen."¹⁹ It is thus conceivable that there may be too much saved or too little saved relative to the extent of roundaboutness of production chosen. Disequilibrium or mis-direction of capital exists in either case. In fact, it is difficult to find any distinction between under-consumption theory and overinvestment theory; in either case there is a mis-direction of capital. Here is indeed more startling news! But it is even more confusing.

Involved in this restatement of overinvestment is a host of economic issues which are far from settled. Especially is this true of issue relative to roundaboutness of production, what it means, and what its relationship is to the rate of interest (likewise unsettled) if it has meaning. This writer has already argued that for any business enterprise there is a constellation of assets, usually both fixed and current. According to the aspects of the theory of roundaboutness of production, when the production process is lengthened then presumably there is more of fixed assets added to the constellation than there is of current assets. Some writers, e.g., Hayek, speak of shifts from lower to higher order of goods, i.e., with a lowered loan rate there will be produced more capital goods than before and relative to consumption goods. Hayek likes to think that there is some kind of an expansion of the vertical arrangement of the capital goods, so that there are steps of capital goods involving different lengths with respect to the time that it takes to produce the finished goods therewith, if there is included in the time length of the production process the time taken to produce the capital goods. But that form of growth is almost impossible. If an enterprise expands its fixed capital structure it will have to expand accordingly its current capital structure; more current assets, raw materials inventories, cash to meet certain expenditures, receiva-

¹⁹Ibid., p. 3.

bles, etc., will be necessary to handle the increased production and sales. It is not claimed thereby that the increase of current assets will be proportionate to the increase in the fixed assets, but there are orders of relationships for the various enterprises depending upon the nature of the product or service produced. What, therefore, takes place under an increase of the investment in the firm is a general increase, not in fixed assets, alone. The investment process when viewed from the standpoint of the enterprise can mean nothing else. If, then, misdirection of investment takes place it is not with respect to any condition of what is termed roundaboutness of production but, rather, it is with respect to the enterprise as a whole. The general confusion over this problem arises from the fact that all too many economists conceive of the agents of production as a sort of a trilogy; therefore, when they treat with the investment process, they can only think of investments in a tangible, real object such as a machine, a plant, or in land.

Viewing the matter from the standpoint of the social order as a whole and not from the standpoint of the single enterprise, then the investment process may to some extent be regarded as the making of commitments in capital goods (in a very general sense of the term; see the meaning given it by Knight in his recent articles) as preferred to consumption goods. That is, people will save because they prefer future incomes which such capital goods may bring to them. If this process be called "capitalistic" or "roundabout" then it means no more than that the rate of capital accumulation has been increased. It is possible that the savers may stipulate, indirectly by choice of securities, whether or not they desire their income from more or less durable goods, but durability, as Knight has well established, does not mean more "capitalistic." If the interest rate is low, it is probable that assembly lines and continuous strip mills will replace the older methods of production, but the interest rate is not the sole determining factor. If the interest rate determined the rate of invention in the economy then there may be something to be said for a concept of roundaboutness which meant the introduction of new machines and new methods of production, but the rate of interest has little, if any, bearing upon the rate of invention.

If any significance is to be attached to the hypothesis advanced by Ohlin, therefore, it must come from some other source.

To say that there may be too much or too little saving relative to the production process set up by the entrepreneur must be adjudged in a different light. A thoroughgoing analysis must be made of the relationship of income to savings and, in turn, of these two to the investment process. Ohlin, himself, has pointed to that need.²⁰ As yet economic and business cycle theory are far from such an achievement.

Ohlin, however, has attached a more specific meaning than the above to the notion of a mis-direction of capital. By tracing a convergent set of causes which are primarily of a structural nature in the sense that these causes have contributed to a horizontal displacement of production in several industries, but especially in agriculture, he proceeds to argue that there has been such a maldistribution of income for several groups that it was only natural for certain lines of products and raw materials to be overproduced.²¹ It may be thus inferred that the chief form of misdirection that capital may take is horizontal, i.e., the overdevelopment of certain industries takes place. The element basic to the displacement is friction.

This inference that Ohlin prefers a horizontal to a vertical overinvestment theory is further substantiated by his castigation of the lack-of-capital overinvestment theories. The lack-of-capital theorists advocate that in order to restore the period of prosperity it is necessary to deflate the costs of production to the extent that it will again be profitable to continue the investment process. Such an argument, Ohlin contends, is obviously unsatisfactory, for it overlooks the fact that the depression is characterized by a great over-capacity in most of the branches of production. It is probable that a further lowering of the interest rate and wages will only lead to further declines in the prices and in no way achieve the desired results. Presumably, costs reductions can become competitive as has done the depreciations in the values of currencies.

Although the above may serve to indicate some aspects of Ohlin's position with respect to the scarcity-of-capital theory, it is not intended as representative of the present writer's posi-

²⁰Compare "Till fragan om penningteoriens uppläggning," op. cit.

²¹"Ungelöste Probleme der gegenwärtigen Krisis," op. cit., pp. 4-10.

tion with respect to the same theory. He prefers to be an eclectic in the sense that he holds it is possible that both a horizontal as well as a vertical displacement of the investment process may take place. The scarcity of capital is therefore only one factor in the explanation of the appearance of the reversal. It is conceivable, as Spiethoff shows, that overproduction of capital goods may occur accompanied by a lack of capital. A shortage of the raw materials of production means overproduction of other categories of goods, or vice versa. But usually what happens is that there appears a shortage of savings (monetary) towards the end of the boom and since these funds are set up to demand capital, a shortage of them means a reduced demand for capital. A reduction in the demand for capital later means overproduction in the auxiliary lines of goods. Another important phase of the lack-of-capital theory is that presented by Cassel. It has already been reviewed, but a reiteration of its major points will serve to emphasize anew the theoretical value of the theory under discussion. Lack of savings or capital (in a general sense) means also that some manufacturers are not in a position to purchase from another manufacturer the semi-finished products which go into the production process. To repeat, here is an element which must not be disregarded, for it explains how powerful a force the lack of capital may become.

Ohlin, in his enthusiasm for an approach which suggests that each phase of the cycle be analyzed separately, fails to give proper recognition to the relationship that one phase may have to the other. It is questionable that any lack-of-capital theorist would hold that it is the lack of capital which causes the cumulation downward. If he does advocate the reduction of costs of production as a possible stimulus to a return to at least stability, it is because he believes that there are other factors in the situation contributing to the movement. What is in the back of his mind is the very same thing that is in the back of Ohlin's, namely that a maladjustment has taken place in the accumulation of capital and corrections must be made. Whether price and costs reductions constitute the proper approach to such adjustments is another matter.

Sinding.--In an economy in which the essential portion of production were financed by "own" capital and not by "borrowed" capital there would not be found the tendencies to expansion and

contraction which are found in the modern economy. For the firm which trades on equity (Sinding does not use this term, but develops a somewhat similar concept) the chances of profit are greater than for a firm which does not. Given a reason, such as a new machine, the firm will borrow so as to introduce that improvement in production technique. This movement may become general and as loans are increased prices rise. Contract the loans and the prices decline. The usual theory, says Sinding, talks about lowering or raising the discount rate, a raising of it effecting a price decline. But that viewpoint is not the important element in the situation. It merely takes into account what the individual business man intends to offer in the form of goods; it fails to recognize the demand, expressed in money. The greater the contraction of loans on all sides, the greater is the fall in the general demand of the whole economy, and the greater is the price decline. It is thus the credit system which brings about the conjunctural oscillations, all because business and individual members of the economy borrow under such a system.

There is no denying of the importance of the contraction of credit. That importance has already been demonstrated by Cassel and by others. And it must be admitted that if it were not for the credit structure there would be less violent cyclical oscillations. What Sinding does, however, is to place the emphasis upon the wrong element in the situation; it is not the borrowing that makes for difficulties, it is the deposit creation function of the credit system which does.

Pedersen.--Inasmuch as Pedersen has only presented certain aspects of the theory of cumulation, he does not develop a theory of the reversal phase. Presumably, however, it would follow the modified Wicksellian approach derived by him, so that a decline in the natural rate (as defined) would mean the beginning of contraction in the process.

Warming.--Although Warming has been placed in the oversavings group, his eclecticism warrants the inclusion in this section his thesis on the cyclical reversal. He places particular emphasis upon the rise in the discount rate, coupled with the rise in prices of raw materials and the rise in wages. Curiously enough, savings, too, are no longer sufficient. It is, however, the discount rate which works the greatest hardship upon the different enterprises. The course of its influence is as follows: first and

strongest upon speculation (primarily in inventories) thence upon building activities, then upon plant investment, and finally upon general industrial and trade activity. He does not establish any theoretical reasons for the course of these events.²²

2. The Oversavings Theories

The general form of oversavings theory holds that the price decline comes first from the consumption goods side, due to the fact that incomes have not kept up with production, underconsumption resulting in that bracket of goods. This is the opposite position to that of the overinvestment theories, whose thesis is that the price decline comes from the capital goods side, where overproduction has taken place; this latter form of overproduction may be either horizontal or vertical. These counterparts may be said to constitute the overproduction paradox. In reality an overproduction of either form of good means the same thing, the inability of entrepreneurs to hire the agents of production at such costs of hire which will warrant their use relative to their productivities. It can mean no more nor less. If that be the case, then, it may be asked, what is the sense to talk of a difference between the oversavings and the overinvestment theories? Is there a difference which is more apparent than real? The answer to this question may prove to be difficult to find.

Those who contend that the overproduction comes in capital goods find that the public has preferred present goods more than future income, while those who support the other view have attempted to show that it is the preference for future income over current expenditure which has been the fly in the ointment. Here is, after all, possibly a real difference.

The total demand in the economy is made up of the demand for consumption goods and the demand for capital goods. If there is no capital consumption²³ then it may be said that the total

²² Gode og daarlige tider, pp. 48-49.

²³ The problem of capital consumption involves some highly debatable issues. It is, however, conceivable that at times, entrepreneurs may treat with the amortization allowances on their plant and equipment in such ways as to make for consumption of their capital or assets. Assume, for instance, a machine which according to general engineering and economic estimates has a life of five years. If the entrepreneur in order to show a higher profit, writes off less than the required amount, then it may be

income of the economy is equal to the total demand. And total income is equal to the total output of the economy. So, by a devious process, it has been said that the total income of the economy buys the total output as called for by the total demand. But there must be something wrong with that statement, for at times the total product is not taken off the market, hence the total product may not be equal to the total demand. How, then, may a discrepancy appear? Is it conceivable that in the spending process somewhere, whether it be for capital or consumption goods, there is a hitch which does not allow for the free flow of funds into the markets? The answer to this question, for both the over-saving theorists and the overinvestment theorists is the same: There is no difference; hence the answer must lie elsewhere.

An income receiver may spend his income (a) when he receives it, (b) before he receives, (c) he may let it lie idle some time before he spends it, or (d) he may spend a portion of it and save the remainder. A user of savings of the individual and of the firm (the entrepreneur) may put it (a) into investment immediately, (b) he may wait until a favorable opportunity comes before using it, or (c) he may use it to cover losses. The directions taken by expenditures and savings, the time taken for action, and the time required to effect the process started, all contribute to varied situations in which there may appear discrepancies as to the relationship of total output or product to total demand.

The Wicksellian theorists would contend that savings may be equal, greater, or less than investment, thus there may be equilibrium, disequilibrium, and disequilibrium, respectively. Another approach would be through the so-called velocity of money analysis. How fast do funds set aside for various uses, consumption goods or capital goods, get into the process for which they were originally intended? For example, funds to go into investment may lie idle for a considerable time before the investment process is begun in the sense that the materials and agents of production are purchased and hired. (For Keynes and Ohlin, this last situation would not be true, unless they gave savings a different definition.

said that he is consuming his capital. Capital consumption may also take place when proper maintenance is not allowed, thereby showing indirectly a higher credit to income. It is questionable, as some do, to regard the use of sinking funds set aside for replacement of capital for other purposes than that intended as capital consumption.

than abstained-from consumption.) Or funds may be hoarded; the unsophisticated under-consumption theory leans heavily upon this interpretation. A more sophisticated approach than the preceding is to argue that the rate of increase in savings may be pushed up so greatly so as to bring disequilibrium for a time until readjustment may come, but that disequilibrium may mean the appearance of a cumulative movement downward.

There is one approach which is, above all, most commonly accepted. Savings go into the production of capital goods and it is assumed without time differences or differences of direction (in a horizontal sense). The real difficulty appears when the consumption goods begin to pour forth from this new capital goods structure. The savings process has reduced the demand for the consumption goods and there is now a plethora of these upon the market. In other words, here is disregarded the fact that total demand is made up of the demand for both consumption and capital goods and it says that if so much more capital goods is demanded then that much less consumption goods will be demanded. A price decline must therefore appear for the latter so that the total income may be used to purchase the total product; and it is usually held that this price decline is disastrous for the producers, because rarely are costs covered. (This is the definition of over-production used by the trio of Danish writers herein listed as oversavings theorists.) There are a number of assumptions made hereby: (a) that the income which goes into savings does not come out again as income;²⁴ (b) that no technical improvements have been introduced so has to change the costs; (c) that no changes in the incomes and costs relationships have taken place through the new accumulation of capital; (d) that the productivity of the factors of production remain the same, and, therefore, their costs to the entrepreneurs; and others.

But none of these conditions hold. Savings used in the production of capital goods ultimately mean more wages (Birck's theory of oversavings recognizes this fact and emphasizes its importance; Pio assumes that it is true). There may be any number

²⁴Those who refuse to accept this rather unsophisticated approach, hold that what happens is that wages lag behind the general price rise and that therefore labor has not sufficient income to take up the product which comes on the market from the new machines.

of technological improvements made and, for that matter, what is the purpose of the increase in the capital structure other than a price reduction! Changes in incomes are taking place constantly. Under the usual movement upward, the creditor class is steadily suffering a reduction of its income, while wages are increasing; the entrepreneurs find their incomes increasing. It is true that wages lag behind the price rise, but that proposition is accepted by both the oversavings theorists and the overinvestment theorists (for the first it makes for the reduced consumption and for the latter it makes for the profitability of the production of capital goods). Obviously, the productivity of the agents does not remain the same, even relatively the same since one factor is under the movement upward increasing at a greater rate than are others.

How then does oversavings appear? Both Birck and Warming offer rather interesting answers to this question. Pio's theory offers no solution to the problem, for the above reasons stated.

Birck.--It has been stated that Birck finds that savings which go into the production of capital goods of automatized techniques, resulting in the displacement of labor, bring underconsumption. The displaced labor is unable to continue its expenditures on consumption goods because of greatly reduced income. (The basic assumption implied here is that it is impossible for labor to find further employment or to readjust to new employment; it is a matter of friction and inertia.) What really appears is therefore disequilibrium between the proportions of labor and capital which brings about the end of the cumulative movement upward; if, however, there were enough savings to produce additional capital goods so as to place the unemployed labor back to work then equilibrium would be restored. Thus, the real reason, according to Birck, for the underconsumption in the modern economy is that under the introduction of the highly automatized techniques nowadays in use there is not sufficient savings to keep an equilibrium relationship between labor and capital. (This has been especially true in the world since the World War.)

Birck makes in this connection an interesting criticism of Pio's theory. A cumulative program of saving does not take on the full course as described by Pio, since income and productivity relationships change. Only the beginning of his argument is correct.

however, if we approach the point in time where the new capital

yields its product only to find no market, while consequently there follows a depreciation of the capital values, then savings would cease in a social sense. Actually if saving is a habit and further creation of bank deposits is no longer possible and the goods . . . cannot be sold, the banks must use the additional media (presumably savings) in strengthening their reserves and must hold back credit which the producers do not want.²⁵

Since the increased savings on the part of the entrepreneurs and capitalists are not sufficient to realign labor and capital, the prices fall and therewith capital values. The banks become fearful of the future and use the savings received by them to strengthen their positions. Birck should have added that in this sense there may be said to be oversavings, and at the same time lack of capital.

Herein is found an oversavings theory which sets up a rational explanation of why a crisis or reversal may be called forth by underconsumption. The plausibility of it from the standpoint of an adequate theory of causation, rests upon the establishment of the validity of the assumption which is tacit to the argument. This assumption is that the introduction of the technical process or processes which cause the upheaval is widespread.

That Birck has discovered that an oversavings theory must fall back upon the lack of capital thesis to explain the appearance of the reversal is not astounding. What can really be said is this: it is the lack of capital which brings about the situation of unemployment and therewith is generated a state of underconsumption. Looked at from this angle there is considerable validity to so formulated an underconsumption theory. It is an aspect of business cycle theory which should command further analysis along the lines of the Lindahlian or Ohlinian attack.

Warming.--Warming's thesis of overproduction is based on two distinct points. The first holds that when prices are unfavorable, people nowadays prefer to hold "liquid" capital rather than fixed capital or consumption goods. People, however, do not desire to hold cash, for that is non-interest bearing; fortunately for them the modern financial world supplies various kinds of obligations which will permit an approach to "liquidity" and still allow for some return. Obviously, this point does not explain how the reversal comes about and how overproduction appears; if anything it merely states a symptom of the basic conditions.

²⁵ Technischer Fortschritt und Ueberproduktion, p. 17.

The second point smacks somewhat of the Moulton theory of oversavings, although it turns out to be a form of overinvestment theory. (It may be noted that Warming wrote his theory in 1903, while Moulton's appeared in 1934.) Under technological improvement, the producers and the middlemen have been loath to pass on all the costs reductions to the consumer and they have managed through trust, cartels, and agreements to keep (or have attempted to keep) a part of this gain for themselves. The result has been presumably oversavings and overinvestment as confined to the industries enjoying the monopoly or semi-monopoly positions. This overinvestment has resulted in turn in overproduction.²⁶

²⁶ Gode og daarlige tider, pp. 76-78.

CHAPTER XIII

CUMULATION DOWNWARD

This chapter is entitled "Cumulation Downward." The term would indicate or imply that the next phase of the cycle is the reverse of the cumulative upward. In that phase a great growth of capital has taken place, agents of production have been allocated to different industries, new industries have sprung up, new products have been placed upon the market, and an almost complete realignment of the productive forces may have taken place in many of the major industries. Hence the question may justly be asked: Does the cumulative movement downward develop the theory that this whole process of change is reversed and the old order re-established? Hardly! At least the majority of theorists would state otherwise. The single exception is perhaps the Austrian group of theorists which holds that the process of cumulation downward consists of a shortening of the capitalistic process when it has been expanded for "forced savings" and not by "real savings." Whether this almost childlike adherence to consistency can be supported on theoretical grounds is another story.¹

It is not to be denied that in the cumulative movement downward there are many of the reverse aspects of the cumulative movement upward. There are the declines in prices, in interest, in wages; there is the growing unemployment instead of growing employment; there is the general cessation in the production of capital goods as against the increase in their production; all these changes and many more are, descriptively speaking, the reverse of those of the upswing. Moreover and most important, the inflexibility of the economic system is still present, whether

¹Johan Akerman, who is a believer in the theory of the shortening and the lengthening of the production process and also a lack-of-capital theorist, takes the position that the cumulative movement may be reinforced and intensified by accidental causes arising outside of the basic course of the growth and contraction of the cyclical movement. Thus the chief lack-of-capital theorist in Sweden finds distinct differences in the cumulative movement downward from the cumulative movement upward.

to the same degree is unknown, but it is still present. It is in this friction and inertia factor that relativity to the cumulative movement upward is found. Errors have appeared in the process upward; this condition no theorist seems to deny; the lack-of-capital theorist who treats with a vertical maladjustment of the process calls for readjustment since some entrepreneurs have expanded their plant and equipment too much relative to the available savings; the overinvestment theorist who sees in horizontal expansion a cause of maladjustment in particular industries and their satellites enterprises must call for readjustment to direct the agents of production into proper channels relative to the real demand curves; the underconsumption or oversavings theorist calls for a readjustment between capital goods and consumption goods. But the relationship of the cumulative movements extends only to the presence of inflexibility; they are otherwise apparently different.

There is, however, no clarity on this last point. The theoretical position of the majority of writers on the cause of business cycles seems to be: What goes up must come down. Hence they have proceeded to develop the course away from equilibrium and, once having shown some form of cumulative movement upward they stop at the "crisis" and the cumulative movement downward is let go as it chooses, usually it chooses to be the opposite of the movement upward. The so-called "self-generating" theorists do not escape this criticism for their "theories" which usually treat with four phases of the cycle are nothing but generalized description and contain little causality. The Scandinavian theorists are no exceptions to this general rule. It is quite true that a number of these latter writers (Brisman, Akerman, Rohtlieb, Ohlin, and Lindahl may be mentioned) have suggested the need of a "complete" theory, but the move to such a correction of cycle theory is only from a few sectors.

A complete theory of the business cycle is much more than the application of the notion that all that goes up must come down. A complete theory must explain why there is contraction after expansion; one phase does not necessarily follow because the other has transpired. If it could be said that this is all that is required of a business cycle theory, then there would be no problem; the cycle would automatically be explained. But contraction does not necessarily come because there has been expansion. The hypothesis of the uniformly progressive economy has already been

developed. Therein it was shown that the capital accumulation, the sole purpose of the progressive economy, may take place without any cyclical fluctuations occurring during the process. In the theory of the cumulative movement upward it has been further shown that this process of accumulation may become cyclical because the various economic forces do not expand uniformly due to frictions and inertias and under the stimulus of a further expansion process, that of bank deposits which permits a rapid increase in the process of accumulation.²

Due to limiting factors this expansion process eventually comes to an end; due to errors that have appeared in certain sectors of the process, corrections must be made. The extent of these corrections depends then, in view of the presence of frictions and inertias, upon the direction that capital accumulation has taken, vertically and horizontally. It is not a matter of contracting the capitalistic process that is involved in the process of correction; it is a problem of the re-allocation and of shifting of the agents of production relative to their marginal productivities. Those contractionists who advocate the reduction of costs, wages, and interest, in order to "restore the profitability of enterprise" disregard this very fact, that reductions in cost will not correct the errors of "capital misdirection," to use Ohlin's terminology and to apply certain aspects of his theory of the contraction process. This process of correction cannot, because of the inertias and frictions, take place immediately; therefore, it is possible that adjustments which take place evolve into major movements of the economic forces. If capital misdirection has been great and if there were present intensifying factors, then the adjusting process generates cumulative forces of a kind comparable to those of the upswing of the cycle. Johan Akerman's

²Since the Scandinavians have approached the problem of expansion primarily from the standpoint of income, the velocity of money has not been given much attention. This attitude is fostered mainly by the monetary theory of Wicksell who considers velocity as being naught other than the very expansion of credit (giro and bank). It may possibly therefore be said that for the Swedes, especially, that velocity is no more than the volume of trade stimulated by the expansion of credit. Since there is much obscurity about most meanings of the term, this writer hesitates, however, to make this statement with full certainty about their position. He prefers to take the stand that the theory of trade fluctuations is to a considerable extent the study of fluctuations in velocity.

position that the readjustment which follows the boom may be great because of a great accumulation of capital is thus in essence a statement of this theory of correction and his contention that such adjustment may be great because the capital accumulation has been great has no small significance.³ It is, moreover, possible that the process of correction may generate thus into a process of deflation, which is distinct from the adjustment process. When the adjustment is completed the system would come to an equilibrium and remain at such a point until there appeared an impetus to another cumulative process upward. When deflation sets in, however, then the process develops into a Wicksellian cumulative movement downward with an uncertain bottom. Deflation and readjustment are thus distinct phenomena. In arriving at this conclusion the writer believes that he has been especially influenced by Ohlin.

A. Technology Theories

1. Inventions, Discoveries, and Improvements in Technology and Production Methods

Cassel.--The "principle of action and reaction" as presented by Cassel amounts to hardly more than a Babsonian notion of "what goes up must go down." His descriptions of the upswing and the downswing present far from an exact theory of cumulation. "There is a . . . reciprocal action between the rate of interest and the process of the cycle."⁴ A low rate of interest accelerates the production of fixed capital and a high rate of interest brings a decline in its production. The downswing thus becomes a phase of the cycle which is fostered by the rise in the rate of interest (along with other costs of production) and is characterized by a reduced production of fixed capital goods. This latter characteristic has no direct relationship to the production of consumption goods. Hence, it may follow that the length of the period of reaction is determined mainly by the time taken to restore the conditions to make again capital production profitable for the entrepreneurs. How long this period may be and what economic factors enter into the situation to make for the adjustment

³Cassel would claim likewise.

⁴The Theory of Social Economy, pp. 640-41.

Cassel does not develop.

Gustav Akerman.--Akerman only presents the theory of cumulation and of the reversal but does not explain what follows after the reversal. No doubt, since his is a theory of horizontal expansion of production and hence if there be error in the allocation of the agents of production under such an expansion, then there may appear a period of readjustment. It is conceivable that Akerman, too, would tie up his theory of structural displacement with some version of the Wicksellian short-run theory of money.

2. Superiority of Large-Scale Production

Brock.--The great scarcity of labor which appears at the end of the hausse brings the culmination of that phase of the cycle.

The great demand for capital goods comes to an end, and the sales by the capital producing industries fall greatly, bringing contraction and wage reductions in those industries. And since these industries were the ones which drew the general system into the hausse, it is not these which bring the system into stagnation. Reduced wages brings curtailed demand for general goods and other industries are forced to contract and reduce wages.⁵

What reduces the demand for the capital goods in the first place is the growing supply of consumption goods brought forth by these new capital goods produced during the upswing and a "surplus" of consumption goods appears. (There are a number of unsettled issues in connection with these statements of Brock, but since they have been treated elsewhere, it need only be pointed out that his exposition is confusing for the simple reason that he is unwittingly an exponent of a lack-of-capital theory.) The general decline in prices and wages follows. Here is obviously no exact theory of the cumulation downward.

3. Capital Replacement Theory

Schönheyder would hold that the cessation of replacements curbs the upward movement and starts the downswing. How the process of reinvestment as he develops it turns into a cumulative movement downward is not clear.

⁵Op. cit., pp. 227-28.

B. Theories of the Errors of the Exchange Process

The psychological factors of risk evaluation and speculation, according to Myrdal, Lindahl, Johan Akerman, Davidson, and Pedersen have accelerating effects upon the cumulative movement downward, even as in the movement upward. No one of them treats the psychological as a distinct cyclical phenomenon capable in itself of generating a cycle.

Einarsen presents no theory of the cumulative movement downward.

C. Credit and Savings, Overinvestment and Oversavings Theories

1. Overinvestment Theories

Wicksell.--Whether Wicksell in his conjuncture theory would follow Spiethoff in setting up a theory of the cumulative movement downward cannot be said. The latter falls back to a considerable extent upon the psychological in showing the process of reaction to the upswing.

As far as the monetary approach to the fluctuations in prices (Wicksell regards the variations in prices as an important concomitant element of the cyclical oscillation) may be treated by him, it need but be said that when the loan rate rises above the natural rate, then a cumulative movement downward starts, characterized especially by a fall in prices. The producers suffer losses and therefore contract their operations. Wages and rents go down; therewith the price decline is accelerated. Wages, etc., are again reduced, and new price fall takes place. This decline in prices will continue until the natural rate is raised, or until the banks lower the loan rate.⁶ This course of events will depend, as Wicksell observes, upon the action of the natural rate relative to real causes or relative to the loan rate. In the derivation of this phase of cumulation Wicksell does not develop any such aspects as would point to an assumption of friction and inertia in the economy.

It must be again emphasized that Wicksell regards the

⁶Geldzins und Güterpreise, pp. 137-38.

loan rate as a fairly passive factor, while it is the fluctuations in the natural rate which are the active forces in the price oscillations.

Davidson.--Davidson does not present any theory of cumulation. He, however, attempts an analysis of some of the intensifying factors of the downswing, an analysis which may be of value in the future in connection with the study of capital movements and gold purchases.

There may, for instance, be a definite causal connection between price declines which are the result of cost reductions brought about by technical improvements and the depression and its great price drops. The wedge making for the causal connections is that it may be believed generally that these initial price declines due to cost reductions are harbingers of a general price decline. Davidson contends, therewith, that there is no evidence that the 1929 depression is caused by a shortage of gold; rather it is the result of these price declines and the anticipation by entrepreneurs of their becoming widespread.⁷

It could be inferred from this finding of Davidson's that when a country stabilizes a general price level under the conditions when a price decline (relative) due to technical improvements is taking place then the results of such a stabilization program is nothing other than an induced inflation. Johan Akerman contends, for example, that such was the case with respect to the Federal Reserve Board policy of 1927-1929. There is strong theoretical as well as empiric evidence to support that conclusion. It has already been shown that Davidson considers the monetary policy of the Federal Reserve Board during the same period as being greatly misdirected as with respect to the great inflow of gold at that time. The inflation due to attendant circumstances found its way into the rising values on the stock exchange and the conditions were thereby greatly amplified. Hence, under the assumption that a price level was being stabilized when it should have been falling, the interjection of the gold into the monetary system may have made for a most powerful inflation. Whether Davidson would also suggest that as a result of the price conditions existing and the movement of funds into the stock market there appeared a case of underconsumption, it cannot be said.

⁷"Det monetära guldproblemet," Ekonomisk Tidskrift, XXXII (1930), pp. 1-4.

There is much to be learned about this kind of inflation; about how consumers behave under price changes which appear under such circumstances; and how savings react to the same changes.

Myrdal.--Although not directly related to the subject matter at hand, it may be of interest to note an analysis made by Myrdal for the purpose of establishing certain aspects of the monetary elements of the cycle.

In one case Myrdal assumes that the long-time rates of interest are subject only to discount adjustments and that there is an equilibrium condition. The discount rate is raised. What is the effect?

A negative difference has arisen between the "natural rate" and the "loan rate" or between the capital value of the real capital and its reproduction cost, and hence the entrepreneurs cease their real investments. Incomes in the capital goods industries drop first, then in the consumption goods industries, whereupon the consumption goods sales decline. If the workers are unionized, then there is resistance to wage cuts and as a result unemployment is accelerated and the production of the economy is reduced and with it the total income.

However, the total purchasing power for consumption goods falls less than the total income because of maintenance of consumptive demand. The result is a greater decrease in savings than in the income going to consumption. Those income groups whose returns on capital stocks and bonds are maintained, continue their usual scales of living to a greater or less degree.

The rigid habits of consumption and the maintenance of the purchasing power, which demands consumption goods, hence, tends in general in the direction against a restoration of the relation. [The relation proposed by Myrdal is: savings (plus or minus depreciation and appreciation) must be equal to the discounted value of the expectations from the capital to be built during the period (includes both new investment and real investments.)] Prices of consumption goods are held up by the maintained demand and since it is these prices which really set going the Wicksellian process, the price decline of the existing real capital will be held in check, and real investment will tend better to be upheld.

Another tendency will come to evidence itself. With the decrease in real investment and the curtailment of the consumption goods production as well, the prices of consumption goods will come eventually to a levelling-out point.

Myrdal emphasizes that these tendencies are dependent upon: (1) the power to maintain consumption and (2) the degree of elas-

ticity of real investment under a negative difference between the natural rate and loan rate. The more present these two factors are, the less the tendencies of cumulation will exert themselves.⁸

Lindahl.--Lindahl treats of a case of a permanent raising of the discount rate from which there follows various reactions in the economy.⁹ Certain of the situations which appear may have bearing upon the present problem.

Phase I. The immediate result of a raising of the discount rate is a decline of all capital values. If it is believed that there will be no change in prices and if there is from the start a stationary condition, then total income remains unchanged, except it may be redistributed to some extent to the benefit of the lenders. If saving does not appear the price level remains constant.

Phase IIa. If the conditions of production are rigid in the sense that goods cannot be stored and that there can be no re-allocation of the agents of production, while at the same time wages are flexible, then with the lowered profitability of the capital goods producing industries there will be a price decline of all the original production powers engaged in those industries, thus offsetting for the entrepreneurs the disadvantage of the raised rate. The supply of consumption goods remains the same, total incomes are affected as before, and if there is no saving then the price level is constant.

Phase IIb. If wages are flexible, to the extent that no unemployment appears, while production conditions are also flexible, the raising of the rate will bring about a decrease of storing of goods and a shortening of the average period of investment of capital. The result is a fall in the prices of consumption goods, and with the reallocation of the agents of production there will be a further increase in the supply of consumption goods whose prices will slowly fall as production of them is increased. From this there results a continued price decline; capital goods prices will fall as the prices of consumption goods fall; wages are again reduced and the prices fall again. The movement becomes cumulative, if the consumption habits of the people are not rigidly fixed; in the latter case the decline may be to some extent coun-

⁸"Om penningteoretisk jämvikt," op. cit., pp. 270-74.

⁹Penningspolitikens medel, pp. 48-51.

teracted by the rigidity of consumption. There will be some redistribution of income. The lending capitalists have received greater real incomes (it must be that Lindahl assumes tacitly that the lowered discount rate affects likewise the long time rates) and so has labor, if wages do not decline proportionate to the price drop. On the other hand Lindahl suggests that the entrepreneurs in order to cope with the declining prices, lagging wages, and to defray the expense of interest on loans will be forced to consume to some extent their own capital. How this consumption of capital takes place Lindahl does not state. To the present writer it would seem that capital consumption would hardly appear; rather what would happen is that some of the entrepreneurs would be forced to dispose of their shares or a portion of their shares in the enterprises in order to meet the outlays which are not fully covered by the goods prices. This is not capital consumption but is merely shiftability of funds.

Phase IIc. Assume, however, that wages are somewhat inflexible. Then the price decline brings unemployment. The greatest decline is within the capital goods producing industries. This development may spread to the consumption goods industries bringing thereto price declines and unemployment.

Phase IIId. (IIIda is omitted.) If the entrepreneurs now anticipate a continuance of the price decline, then the movement becomes precipitous. The period of investment is shortened; the result is a greater displacement of production and therewith increased unemployment. In such a case no equilibrium position appears; more likely there is a crisis which brings the process to an end.

It must be understood that even these cases of cumulation downward are set up under rather rigid assumptions. Above all, Lindahl has assumed that there is only one loan rate and it is the same for short time and long time borrowings. He develops other aspects of the import of the discount rate under the realistic conditions that there are what Myrdal calls "spheres of indifference." These aspects of monetary policy will not be treated herein.

It is important to note that the process or sequence analysis used by Lindahl allows for the drawing of better distinctions as well as clearer conclusions. Further study along this direction should provide a better understanding of the expansion and

contraction processes of the economy.

Johan Akerman.--Akerman closely follows the Wicksellian process analysis especially with respect to the relationship of the loan rate to the profit rate, the movement of prices, wages, and costs of production. He does not develop any features of this phase of the cycle which would point to the action of the changes in the profit rate upon incomes and various income levels. According to his approach the cumulative phase downward is essentially a liquidation period, but like most lack-of-capital theorists, he does not state the theoretical conditions for such a position. Nor does he show what he really means by liquidation. (The latter is a fault of many of the cycle theorists.) It must be, however, that the liquidation process which he has in mind is that of the large stores of finished goods which, according to his thesis, have come into being during the cumulative movement upward.¹⁰

Brisman.--It has been stated that Brisman develops the essentials of some aspects of a monetary theory of the cycle. If there has been inflation in the economy then deflation will follow; prices decline; wages, and other costs must be reduced before the upswing will take place again. Of course speculation and the production of capital goods are elements in the oscillation and in the stimulation of the oscillations, but the price movement upward is a product of inflation and the price movement downward the product of deflation.

Ohlin.--In his analysis of particular price movements, Ohlin presents the case of a "price decline process."¹¹ This case likewise is not set up as a part of a "complete" cycle analysis, but is intended to bring out some of the problems relative to monetary policy. However, a study of it will prove fruitful for an understanding of some of the price shifts of the cumulative movement downward.

The checking of a general price rise is associated either with a decrease in the demand for some group of goods or with the appearance of a rapid increase of supply, e.g., when the owners of inventories throw these upon the market. In many cases the impulse may come from a decrease of finished capital goods which draws

¹⁰Om det ekonomiska livets rytmik, pp. 234-40.

¹¹"Till frågan om penningteoriens uppläggnig," pp. 69-73.

with it a decrease of the raw materials that go into such goods. He does not state why this decrease appears; it may be inferred from his article on "Ungelöste Probleme der gegenwärtigen Krisis" that the factor contributing to the decrease is the misdirection of capital investment, especially along a horizontal direction. Here he says that a thousand and one reasons may be present, e.g. the prospects of profitability may decline and therewith comes a fall in subjective values of capital and a decrease in demand for that category of goods.

There is a decreased production of these goods resulting from the price decline of these goods, a reduction of employment, and a lower total income. Consumption demand falls therefore, although not in the same proportion as the demand for the capital goods. A decrease of consumption goods ensues with a price decline attendant. This change is felt in turn in the industries producing the raw materials which enter into the production of consumption goods. In general there is a reduction in profit.

If the price decline is great and of long duration, it may happen that the production of capital goods falls below that quantity which is necessary to the maintenance of the capital structure; moreover it may happen that inventories decrease. In this event, says Ohlin, capital consumption appears.

Despite the fact that consumption is forced down, it exceeds income.

Ohlin presents a rather interesting observation with respect to the investment process. The decrease of the real investment corresponds, practically speaking, to the reduction of new investment, which in turn is equal to the decrease in savings; since the depreciation is not decreased very much, under present accounting practices it may be considered that almost the same re-investment holds. The decrease in savings is equal to the sum of all new savings minus the credits to consumption and the negative incomes with the latter brought about partly by the decrease in the real investment. Of especial interest is the fact that he holds that the capital structure is usually maintained. This view opposes that of the Austrians who would contend that with a shortening of the production process capital consumption may take place. In fact Ohlin places small weight upon the lengthening or the shortening of the production process in the expansion and contraction of the production process.

It must also be noted that Ohlin tends to view the whole process of contraction from the effect that it has upon total income. Thereby he arrives at somewhat different results than would the pure deflation theorists. Of course, too, he sets up a kind of sequence or process analysis which shows the relationship of the propensities to save and the propensities to consume in an entirely different light than would the adherents to a Keynesian type of approach, or the adherents to a Myrdalian method of analysis.

The increase of negative incomes and the reduction of individual incomes are, says Ohlin, the two sides of the same process, the decrease in the net income. How much of the latter may be designated as a decrease in the individual income and as an increase of the negative incomes depends among other things upon the nature of the organization of enterprise, e.g., upon the flexibility of wages. In a study of the deflation process these two things must be borne in mind. To some extent there is here agreement with Myrdal. But Ohlin finds otherwise with respect to another matter.

If the purchases were greater, the losses would be less and the individual incomes in total would be greater. Here is a statement which is rather difficult to interpret. It would seem that Ohlin suggests that if the consumption process were fairly rigid so that the consumption purchases were maintained relative to the decline in incomes (how otherwise they could be greater is not clear), then certain of the production forces would be maintained. From one standpoint this is correct, namely, on the basis of the assumption that the maintenance of consumption would be reflected in the investment process. But maintenance of consumption will not bring an increase in investment. Hence there will not be an increase in income; all that can happen is that there will be a tendency to the maintenance of the present income levels, since there is a continued decline in the incomes from the investment process, i.e., from the sale of capital goods. It is possible that Ohlin overlooks thus the effect of the decline in investment upon the total income. Myrdal has already shown that if there is rigidity of consumption this tends to decrease greatly savings, thereby preventing the restoration of equilibrium, as with respect to the capital value of capital and its reproduction cost. Ohlin may contend that these differences arise out of the differences

in methods of analysis. But that would be no answer, for he must explain the offset in the great decline in total income due to cessation of new investment. The confusion may, if anything, arise out of the definition which Ohlin gives to savings, a definition which he applies alike to the business enterprise as well as to the individual.¹²

To continue with the cumulative process, it may be admitted with Ohlin that if there does appear rigidity in the consumption process then there may appear a tendency to a stabilization of the decline.

It must also be agreed with Ohlin that there is quite a difference of opinion as to what happens during a price decline process, if the desire to save declines and the demand for consumption goods increases. That difference has already been evidenced. The prices on consumption goods and their raw materials tend, Ohlin asserts, to rise. But what happens to the demand for and prices upon capital goods? He says that the answer is dependent upon the anticipations of the entrepreneurs. If the entrepreneurs are optimistic then the demand may go up and, if this increase is large, then prices will accordingly be affected. Contrary, vice versa.

The increase of consumption demand, however, does not mean that the net saving becomes less. He holds the contrary. Total demand and the gross income increase more than the consumption demand. Thereby the gross income is increased while the negative income falls. Hence net savings goes up. It has already been objected that this is only true dependent upon the degree to which consumption increases; if the rigidity of consumption is such that it only offsets the decline in net investment then there will be

¹²Certain of the difficulties of the use of this definition of savings has already been indicated, but particular aspects of the problem should be re-emphasized. Ohlin has held that savings is always equal to investment. This contention is true only insofar as it is applied to the single enterprise, but it does not apply to the single non-business individual, the salary-or-wage-earner, for example, unless a certain kind of a capitalization process be set up for individuals as well as for the business enterprise. The business enterprise may not only save but it may also invest in the sense that it may put the funds so saved into use in its own plant. But not so with the individual; investment for him means that he must turn over his saved funds to someone else to invest, and under such a process there may be a considerable lag between the investment and saving. In that event if Ohlin is to contend that savings is always equal to investment he must therefore choose a unit-period of investment sufficiently long to make the two equal.

no increase in total income. If, however, consumption increases more than this decrease in investment then a process of cumulation upward may appear from the consumption goods side. But Ohlin does admit that there are many difficulties in this connection and answers to the questions which arise therewith must come from business cycle theory. The underconsumptionists have long held that the recovery is induced from the consumption goods side. The validity of their answer must be deferred to the next chapter.

Pedersen.--The attempt of Pedersen to present under more realistic conditions the cumulative process of Wicksell is well worth examining.¹³

Curiously enough, he assumes, rather than a raising of the loan rate, that a general rise in wages takes place. He does not say so, but he must assume therewith that the productivity of the laborers remains the same. From there on he traces a cumulative process downward.

He argues that the increase in wages reduces the profits relative to new investments, other things being equal. Presently the loan rate therefore rises above the profit rate which is expected from new investments. The result is a contraction of the investment process and a situation, described by Keynes as savings being greater than investment, appears. The producer who supplies the raw materials of production for the capital goods industries are also forced to contract and their funds come to lie idle at the banks. They also are forced to release their workers and a state of unemployment of labor and resources sets in.

What happens further depends upon a number of conditions. If the producers of consumption goods do not reduce their prices, then their sales will decline and further unemployment arises, a process which is accelerative and cumulative. If, on the other hand, the prices of consumption goods are reduced, then the activity in these industries is increased (why this should follow Pedersen does not prove, unless he tacitly assumes that there is some compensation for the decline in the total income) although the profits decrease. The latter event brings a further contraction of the investment process, increasing the holding of cash and unemployment in the capital goods industries.

The extent of the price decline depends partly upon the

¹³"Wicksells Theorie," op. cit., pp. 132-140.

relationship of the fixed costs to the variable costs and partly upon the monopoly conditions with respect to prices. Prices would hardly fall below the variable costs. In those industries where labor is not an important agent of production and where a contraction of the production process may be harmful, as in agriculture, it is possible to regard all costs as relatively fixed; in such cases production will not be decreased for some time.

Certain of these aspects of the cumulative process downward are not incorrect. But to assume, as does Pedersen, that a general wage increase may bring such a process is another matter. It is hardly conceivable that a general wage rise will bring a cumulative process downward. If it appeared alone in the capital goods producing industries, so that the natural rate fell below or even equal to the loan rate then there would appear a general contraction in that industry with the cumulative process described by him dependent upon the circumstances and conditions under which the wage increase took place, i.e., dependent upon how the entrepreneurs felt that the wage increase may hurt their profits, and also upon how the productivity of labor were affected thereby and under the possible introduction of new machines. A general wage increase, or a fairly general increase, would most likely bring nothing more than a general price rise and industry would be in the same place as before; only people with fixed incomes would be adversely affected. If the wage increase appeared in the consumption goods industries the effects therefrom would depend upon how the total money income were redistributed thereby. These are also matters which still require considerable study.

2. The Oversavings Theories

No one of this group of theorists presents an adequate theory of the cumulative movement downward. Warming develops some empiric aspects of the depression; Pio states little if anything about it or the process of contraction; while Birck only sets up a case to illustrate his version of the principle of acceleration but does not apply it directly to his theory of the cycle. This case is presented for the purpose of demonstrating that there are varied forms of the acceleration principle as originally derived by Carver and Bickerdike, and later by Clark. For the most part it cannot be applied as a general theory of the cycle.

Birck assumes that two goods, A and B, pass through four

production stages. Under an equilibrium condition all goods processed are sold--say ten units. Hence

10 A_1	10 B_1
10 A_2	10 B_2
10 A_3	10 B_3
10 A_4	10 B_4

for the four steps.

Assume now a change in demand so that consumers want from now only eight A_4 and twelve B_4 . The producer of the good A_4 sells, therefore, only eight units and since he expects in the future to sell only eight units, therefore, he orders only six the next time. A_3 has, therefore, four units in stock, and since he estimates now only a future sale of six units, he orders only two A_2 , etc. The further up the line, the more curtailed production becomes. In the meantime, there is overproduction, until adjustment is made.

It is quite true that this type of accelerating process holds for the economy, but it does so only under inflexibility--primarily, lack of knowledge. Inventory holding becomes merely the evidence of the existence of economic inflexibility. This type of the acceleration principle applies to either underconsumption or overinvestment theory.

In concluding this chapter on the cumulative movement downward, a few generalizations may be drawn.

The majority of the writers who have treated with the cumulative process have come to regard it as a general course of inflation and deflation which has been related by them to the credit expansion powers of the economy. In no sense, however, does anyone of them make it a purely monetary process, but introduces real factors into the movement in either direction. Furthermore, no one of them, with perhaps the exception of Brisman (and it may be inferred that Cassel would nowadays hold to a pure monetary theory of the cycle and hence would take the same position as Brisman) makes the deflation an exact process of reversal of the movement upward; there are various conditions of inertia and inflexibility which may bring the system to react somewhat differently under the two courses of movement; and as Ohlin has well established it is not necessarily true that the one process may grow entirely out of the other. If there are differences in

approach they are differences which arise out of the fact that some theorists may stress a horizontal maladjustment of investment while others place emphasis upon a vertical maladjustment.

Several of the writers, Davidson, Johan Akerman, Ohlin, and possibly Pedersen contend that the basic cumulative processes may be affected by intensifying factors of the cycle such as tariffs, taxes, gold discoveries and international capital movements, war, structural displacements, speculation, monopolistic price policy, monopolistic wage policy, and other similar factors. In the event such factors are powerful the cumulative movements may be greatly accentuated, or even driven completely into such a course as would be far from a deflation movement. That is, the usual course of decline of prices and wages and other costs of production may take a shape far different from the "normal" cycle as would be prescribed by the credit expansion and investment process. Therefore, cycle theory sometimes becomes the problem of exceptions; Davidson has pointed to the need for particularized analyses of the cycle as well as generalized.

A final statement may be made. The theory of the cumulative movement downward is far from the developed stage of the theory of the cumulative movement upward. Since in Scandinavia it is almost generally accepted nowadays that the basic elements of the cumulative processes are friction and inertia, some of the writers seem to have concluded that to have explained the upswing is to have explained largely the downswing, at least to an extent that only exceptional and divergent features of the downswing have been treated. Ohlin, Lindahl, and perhaps Myrdal have, however, shown that that need for a theory of cumulation downward is as great as for a theory of cumulation upward. Nevertheless, the study in cycle theory is still concentrated upon the attempt to discover means of "propulsion" upward; the theory of the expansion process is gaining a strong foothold in Scandinavia as well as in England. What the future for a theory of the cumulative process downward will be remains to be seen.

CHAPTER XIV

CESSATION OF CUMULATION DOWNWARD AND RECOVERY

Eventually the cumulative process downward comes to an end. Certain forces have appeared which bring about a cessation of the movement. Together with these forces there are others which will drive the movement into another spiral upward. The purpose of this chapter is to examine the theory from the standpoint of learning, how the Scandinavians analyze those forces, and what they consider the primary causes of cessation and recovery.

The Scandinavian countries have not escaped the great flood of treatises on recovery from the Great Depression, and their theories in their own manner have contributed much to the ways and means out of economic stagnation. Sweden, of course, has the eyes of the world upon it because of its supposedly masterful grip upon the cycle problem. The writings on the subject of the cycle have leaned far towards the varied aspects of economic policy rather than towards pure theory of the cycle. For that reason it will not be possible to present systematically the theory on recovery. An attempt will be made, however, to treat with the theories along the lines already developed.

A. Technology Theories

1. Inventions, Discoveries, and Improvements in Technology and Production Methods

Those theorists who, as was earlier shown, develop certain initiating factors such as invention, discoveries, and improvements in technology and production, would undoubtedly consider those factors as having the power to stem the movement downward and turn the tide. Since the majority of these theorists regard the economic system as inherently oscillating, then the impact of such factors upon it will tend to set going again the movement of recovery and stop the downswing of the other cumulative forces.

Wicksell.--Wicksell is more or less the father of the

theory that the system is inherently oscillating and he states that the factors of new inventions and discoveries will bring change. The fluctuations in the natural rate of interest are produced by these factors which make for more profitable production, stimulating the recovery in the investment in capital goods. He does not explain how these real causes exert their various pressures upon the economic system.

Petander.--Petander holds that inventions and discoveries, although important for economic development in their relationship to the cycle, do not directly bring about a general upswing. There must be other factors, especially a good harvest.

Cassel.--Since Cassel's theory treats primarily of the fluctuations in the production of capital goods, the cessation of the movement downward will come when there is an increase in production of those goods. During the period of liquidation which follows the crisis there is a readjustment in the costs of production; wages, the prices of raw materials, and other costs of production fall, and towards the end of the period the interest rate has again declined to a level which makes for possible expansion. Savings do not increase during the depression but a great amount of unused capacity develops and therein is found "a latent production capacity which can be used for the production of fixed capital without causing a decrease in the current consumption, even though it may have grown a bit."¹ When a favorable invention makes for greater profitability then these attendant forces bring into being the recovery from the depression.

Johan Akerman.--Akerman is in agreement with Cassel as to the influence upon recovery of discoveries and inventions.

. . . . there undoubtedly is to be found an important connection between the technological improvements and the conjunctural oscillations The depression is always characterized by technical and organizational betterments within industry brought about by the desire to increase the narrow margin of profit, while characteristics of the high conjuncture is the maximum reached by production but under a decreasing efficiency. By this meaning the technological improvements have unquestionably a significance for the cycle which has not been given full weight in theory Cassel has taken the same position²

Thus the stimulating effect of these technological improvements,

¹"Om kriser och dåliga tider," op. cit., p. 64.

²Om det ekonomiska livets rytmik, p. 83.

according to Akerman, is to better the profit or natural rate of interest.

Akerman in addition places further emphasis upon the accumulation of stocks of raw materials and semi-finished goods as necessary for recovery. If not stocks of goods then savings must be available. He does not think unemployment as a necessary condition for recovery as does Pedersen.

Gustav Akerman.--Since Gustav Akerman presents a theory of horizontal investment as primum causum in a cycle movement he undoubtedly would place more weight upon inventions and discoveries than does his brother. But since this theory is not complete only inferences as to his position may be drawn.

Warming.--The forces which brought about the price decline have to a great extent expanded their strength and any opportunity to reduce production costs so that profits may be restored will be seized. New machines and plants will spring up to replace the old and the marginal plants, and with the appearance of more venturesome spirits in the business world the introduction of such new plants and equipment becomes widespread.³ Warming, contrary to Cassel, holds that a considerable amount of savings has accumulated with the result that the interest rate is low, making for easy adaptation of these new machines. Cassel would reply to this contention that it is true that the interest rate is low at the time of the end of the cumulative process, but it need not necessarily be low due to an accumulation of savings; rather it is low due to an accumulation of bank reserves.

Pedersen.--In his reconstruction of the Wicksellian cumulative process, Pedersen develops the phase of recovery around the usual price and interest rate analysis. An auxiliary factor, however, in bringing about a return of investments is the fact that the entrepreneurs, so as to widen their profit margins, will be induced to introduce improved methods of production.⁴

It may be said that almost any theorist of the business cycle will acknowledge the importance of technological improvements for entrepreneurial activity and that generalization may apply equally to oversavings as well as overinvestment theorist. True, none of the earlier underconsumption theorists made reference to

³Gode og daarlige tider, pp. 38-40.

⁴"Wicksells Theorie," op. cit., p. 138.

the impact powers of the technological improvement, but that was because they did not understand the nature of the price-cost relationship which applied in the short run. A number of the modern underconsumption or oversavings theorists have given a prominent place to certain phases of technical progress in their theories. Of course, there are always exceptions to the rule; even the Austrian overinvestment theories make no mention of the implications of technical progress for their theories of the lengthening and the shortening of the production process (it is possible that the introduction of the theory of technical progress would play havoc with their pet concept of the average period of investment). It is the writer's opinion that the modern cycle theory must more than ever give recognition to the changes that technical improvements may initiate.

2. The Superiority of Large-Scale Production

Brock.--To no small extent Brock implies that his theory of the cycle is a self-generating theory. Since business men are constantly forced by competition to take up the methods of large-scale production they will always be on the move to build larger plants and to use larger equipment. Here, presumably, is all that is necessary to bring about the desired recovery. There is much truth in this position, but it is only a part of the story. After all the superiority of large-scale production hinges not only upon size but upon technology. The large scale production in the steel industry today, for example, would not be possible were it not for certain technical improvements in the processes of rolling of rails and in the rolling of sheet metal; the success of the continuous strip-mill hinges upon changes in the machinery involved. Likewise in the automobile industry the large-scale methods of today were not possible until someone thought of the assembly-line, the turret-lathe, and the modern drop-forge, the stamping mills, etc.

Brock brings in other factors in his rather curious explanation of why the depression must come to an end. He says that the various forces of the baisse come to lose their effect; surplus supplies of goods disappear; wages come down; likewise other costs. He does not feel that the decline in the steel and coal industries are as important as some think; in making that statement he fails to realize that the loss in the total income

therefrom is very great. There is a tendency to maintain activities in the first stages of production which result in turn in a lengthening rather than in a deepening of the depression. A certain degree of stability is therefore slowly attained and as time goes on the capital built during the hausse will wear and will have to be replaced.

The farther we get out of the deeper depression the higher the wages rise, for the prices on consumption goods are lower comparatively speaking than the nominal wages relative to the conjunctural maximum of them. It therefore becomes desirable to introduce more new machines, labor saving devices (finally, Brock recognizes their importance for his theory) and so on, in an attempt to return to a profitable basis at the low prices. A more lively activity appears in the capital goods producing industries and it slowly spreads to the other industrial enterprises.⁵

3. Capital Replacement

Schönheyder.--It is in the explanation of the recovery phase of the cycle that Schönheyder's theory of capital replacement has validity. In other words, it may be said that it is highly possible that entrepreneurs having deferred the replacement of amortized equipment during the depression and when there are signs of improvements they will begin the program of replacement, and thereby the replacement may act as a powerful stimulating factor in recovery. To a large extent, however, the replacement program is so combined with new investment in the form of expansion (witness the changes in the steel industry during the last two or three years) of plant and equipment and in the improvement of plant and equipment that it is difficult to distinguish between new and reinvestment.

Frisch.--What has been said about Schönheyder's theory applies to the almost similar theory advanced by Frisch. They are both theories of impulse factors.

B. Theories of the Errors of the Exchange Process

Almost all theorists of the business cycle would no doubt consider the "right frame of mind" as of significance in stimulating recovery. The importance of the psychological for the "anticipation" theorists and for those theorists who treat primarily

⁵Op. cit., pp. 228-30.

with the investment process has already been examined.

Davidson.--Davidson regards "illoyal" speculation as a product of the boom and therefore it has no implication for the end of cumulation downward and recovery.

Warming.--The concept of overproduction developed by Warming should unquestionably be treated as a psychological concept, although it has not been treated as such in the section in which it was presented. When the cumulative movement upward comes to an end the public prefers no longer to hold long time investments in the form especially of capital goods and buildings but prefers rather to shift to more "liquid" assets such as short time or very good long securities. Warming should have emphasized that this tendency holds not only for the individual member of the economy but also for the business enterprise which likewise attempts during depressions to liquidify its assets as well as it possibly can through shifts of types of assets as far as possible and through the accumulation of cash funds when certain forms of assets as others are amortized. In the recovery this shifting of asset holdings becomes, according to Warming, an important factor in stimulating the investment process.

That portion of the public which has been content to hold securities yielding low incomes rather than to hold securities for which the risk factor is high, will now shift to securities yielding higher returns, and therewith the market for funds for enterprise purposes is greatly stimulated.⁶ Here is undoubtedly, a factor of no small importance for stimulating the capital market in recovery; all too many theorists have not given it sufficient weight.⁷

C. Credit and Savings, Overinvestment and Oversavings Theories

As follows from their explanations of the crisis or the reversal of the cumulative movement upward, the overinvestment theories and the oversavings theories derive different explanations

⁶Gode og daarlige tider, p. 111.

⁷Jacob Viner ("Mr. Keynes on the Causes of Unemployment: A Review," in the Quarterly Journal of Economics, XLVIV [November, 1936], pp. 147-48) has rather skillfully shown how the individual members of the economy fall back upon various devices for achieving liquidity without getting into a cash position.

of the reversal from the depression, or the cumulative movement downward. For the overinvestment theorists the recovery stimulus must come from an increased demand for capital goods, while the oversavings theorists the stimulus must be the result of the increased demand for consumption goods. In some ways these differences present the most controversial aspects of cycle theory. And present theory of the cycle has not advanced very far towards a solution of the problem.

In more ways than one both explanations are valid. It is possible for a movement upward to be induced by activity in the capital goods industries, especially since these industries suffer the greatest decline during the depression. It is equally possible for recovery to be initiated by the consumption goods industries, for if they are stimulated into action it is quite easy to explain that activity will be expanded in the capital goods industries by the application of certain versions of the acceleration principle (Birck's, for example). Thus it cannot be said without considerable hedging that any one of the two theories is more plausible than the other, especially in view of the fact that both classes of theory rest on the assumption of rigidity in the economy.

In making this last statement there is one element which is in danger of being overlooked. From which side, the capital goods or the consumption goods, will the stimulus to the increase in total income appear with the greater rate of speed? It is in the answer to this question that the overinvestment theories show their superiority of the explanation of the recovery, both on a priori as well as on empiric grounds.

Since the greater amount of unemployment has appeared in the capital goods industries and, especially, since the consumption goods industries have acted primarily as stabilizers in reducing the decline of business activity (for no other reasons than that as a rule consumption is governed to a considerable extent by habit and in addition in the modern economy there is a growing inelasticity of demand for many goods) and therefore do not readily attract the unemployed from the capital goods industries, it is the increase in the activity of the capital goods industries which places men back to work at a great speed, with the result that the total income of economy grows rapidly.

A further factor contributing to the superior position of

the overinvestment theories is that they treat specifically with the investment process. They have shown that as far as the course of economic progress is concerned that savings holds a rather passive relationship to the growth of business activity in the sense that positive action comes from the side of the entrepreneurs. They, in an effort to bring about an equality between marginal revenue and marginal costs and to reduce their unit costs are continually seeking for technical improvements; it is through the introduction of such technical improvements that the investment process is set into motion; the result is that capital goods industries are far more sensitive to expansion than are the consumption goods industries. This function of the entrepreneur has been definitely established by Schumpeter, and it has been noted that Brock shows even better reason for importance of the capital goods industries in bringing about expansion (through his principle of competitive construction of large-scale enterprises). Anyone who overlooks the importance of the relationship between price and revenue merely reveals a rather profound ignorance of both economic theory and business practice.

It will not be possible to bring out in detail certain of these basic distinctions in this study of Scandinavian cycle theory because the writers who are classed as oversaving theorists are chiefly eclecticians or else they do not treat with the problems of recovery (Pio).

1. Overinvestment Theories

The overinvestment theorists tie up their theories of cyclical fluctuations with the expansion and contraction of credit (deposits) and, perforce of savings; in fact it may be said that the determinant is the fluctuations in credit or deposit creation, while savings to a considerable extent follow from these fluctuations. Of late a number of economists seem to have come to regard savings merely as one of the results of the expansion and contraction of credit. Be that as it may, the overinvestment theories do place upon the interest rate the role of a determinant of expansion and contraction of the economic forces of progression. And as a rule the majority of this group of theories find that when the interest rate as a loan rate declines relative to the natural rate (it is not clear what Ohlin or Lindahl will substitute for the natural rate), then there appears a tendency to a retarding

of the cumulative process downward, because with the reduction of the loan rate certain forms of investment begin to look profitable and will stimulate the entrepreneurs into expanding the use of their plant and equipment.⁸ Of course, as the bank reserves are again built up it becomes possible for further expansion of credit and the bank brings down the loan rate in accord with the market conditions for a reduction of it. Into this situation there enters a number of risk elements which have never been given much thought. Several writers have suggested that at times the loan rate reflects primarily the risk involved under the conditions present. Pedersen finds that the "pure" rate of interest may be a negative value, while the rate that is really charged is for the risk that must be assumed.⁹ It is a matter which is so involved that it would require unstinted study.

There are other factors of retarding powers upon the cumulative movement downward which are associated with the movements in the rate of interest. It is generally agreed that reductions in wages and in the costs of raw materials of production will eventually tend to restore the promises of a profitable production. Some contend that these factors must be present as well or the low loan rate will have little influence upon the investment process. In other words there is required a general increase in the supply of the agents of production to lay the foundation for recovery. If, then, there is some impact upon the system, inducing a rise in the natural rate, an important invention, an important new product, or, according to some, anticipated profitability of some industry or industries, entrepreneurs are motivated into undertaking new commitments and again the ball is rolling. It seems as though with the slowing down of the cumulative process there appears a form of an inertia which must be overcome and to be overcome there will be required some force or a convergency of forces which have sufficient strength to set the "solid" into

⁸How the loan rate is determined is one of the problems of present day monetary theory. It may be conceived of as being the result of the intersection of the demand curve for loanable funds with the supply curve for funds. However, this is rather poor statement of how such price formation takes place. A partially proper approach to this problem from the standpoint of the analysis of the nature of the factors which determine the demand side and of the factors which determine the supply side.

⁹"Wicksells Theorie," op. cit., pp. 137-38.

motion.

For those theorists who look upon overinvestment as a matter of horizontal maladjustment of the allocation of the agents of production, Ohlin and Gustav Akerman may be so classified, the problem of the cumulative process downward is somewhat different from that of the theorists who place emphasis upon the vertical expansion of the investment process. For them the cumulative process comes to an end when the misdirection of capital and other agents of production has been corrected, and to a considerable extent the rapidity with which this is carried through depends upon the nature of the frictions and the inertias governing the movements of the agents of production. Once these have shifted so that the structural displacements are corrected then a new invention, a discovery, or possibly optimism of entrepreneurs, along with favorable wages, interest, and other costs of production, induce action and another cumulative movement upward will be launched. Presumably, a condition of equilibrium holds until such impacts occur.

The remainder of this section will be given over to a survey of those aspects of the overinvestment theories which depart from the rule or reveal some new thought, upon the subject of recovery.

Wicksell.--Wicksell makes a debatable point relative to the relationship of new inventions to capital.

The latent productivity at the bottom of the depression consists to be sure in part of plans for technical and organizational improvements. These discoveries, in the broad sense of the word, must first ripen, but require afterwards a certain amount of preparatory work, new commitments, i.e., capital. If this capital were to be gathered together at the very moment it is needed, then it could take place only with a considerable contraction of consumption . . . ; if on the other hand there is a lack of capital then the upswing becomes rather weak. It is only when capital, i.e., a supply of goods, has been accumulated during the preceding period of stagnation that a real and continuously prosperous period can appear, labor, and other agents of production be brought into use on a large scale for new investment, while both consumption and production are supported out of this store of goods. At the same time this becomes the only proper way to really profitable capital investment.¹⁰

It is questionable that a store of goods is necessary to carry production during this formative process. If there is unemploy-

¹⁰"Krisernas gäta," op. cit., pp. 260-61.

ment of some of the agents of production and if there is possible further credit expansion then a cumulative movement upward may get into movement without any store of goods. Wicksell's position dates from an early conception of the wage fund theory. In a sense a capital-wage fund theory might be acceptable, nevertheless, a cumulative process upward may be initiated as long as there is a supply of available credit.

Akerman.--The seasonal upswing may act as an impulse factor, making the entrepreneurs more optimistic and with other factors such as a favorable rate of interest, recovery may come with the movement of the season upward.

Akerman presents a relationship of savings to the low conjuncture and recovery which may or may not be valid dependent upon what is learned empirically with respect to the nature of incomes at that point. At the close of the cumulative period savings have begun to increase; consumption automatically decreases, because it is profitable to keep purchases as low as possible in anticipation of further decline in prices, and as a consequence thereof savings continue to rise, possibly influenced by the still prevailing high rates. Akerman does not show what the effects of such consumption contraction is upon income at that time in the cycle, and there is ground for scepticism as to his findings, since contraction of consumption at that very moment may again bring a continued decline in income due to further contraction of production.

There is much to be learned about details of this nature and all too many theorists make such statements as these without being able to give full weight to all the factors involved.

Cassel.--A comment may be made upon more recent views of Cassel with respect to the bank credit expansion function. He writes in Fundamental Thoughts in Economics,

The banks should lend to the public, over and above their own means, only what they can borrow from the public. Thus the banks should not use their capacity for creating a nominal purchasing power in the form of their own means of payment in order to satisfy a demand for capital which cannot be satisfied by actual savings.¹¹

It thus appears that Cassel would regard savings as one of the determinants of the banks's power to create deposits, rather than as a passive element in the expansion process of investment. This

¹¹(London: Unwin, 1925), p. 129.

view represents the older school of thought, although Hayek has brought the notion into considerable prominence in recent years. The contemporary view, as indicated, holds that savings appear primarily as a result of the expansion of credit by the banking system (see especially Myrdal and Ohlin).

Whether it follows that Cassel thereby treats the interest rate as a non-determinant in the expansion process it need not be concluded, for after all he still treats with the relationship of the loan rate to an equilibrium rate.

Ohlin.--Although Ohlin has rather severely criticized the lack-of-capital theorists for wanting to reduce wages and similar costs of production in order to induce a recovery, because such reductions merely sharpen the depression; he does, however, point to the need for costs reductions in the capital industries so that further investment may be stimulated. Thus the lowered interest rate would act positively, while a reduction of wages in that sphere of production may be desirable to bring about promises of profitability. The reduction of the interest rate may come in two ways: (a) the actual reduction of it by the banks, supported by a central bank policy of lowered rediscount rates and open market operations; and (b) the provisions for the reduction of the risk element so that the rate may more reflect the "true rate" (whatever that is) or the rate on real capital.

If the real capital investment sinks further below the level of the offer of liquid capital, a decrease of this offer would contribute to the re-establishment of equilibrium, end the deflation, and evoke a disequilibrium which would lead to credit inflation. Such a decrease in the capital offer can be accomplished through the lessening of the individual savings or through the acceptance of credit for the purchase of non-durable consumption goods; for example, the public budget could be balanced through borrowings. Thus one can increase the demand for consumption goods and lessen the liquid media in the capital market.¹²

Ohlin is not going to take any chances in speeding up expansion of the economic system; not only will capital goods production be stimulated by the lowered interest rate and by such monetary policies as will hasten the effect of the interest rate, but he proposes also that the investment program be forced up through the consumption goods industries by means of loans to consumer so that by these loans "the public may balance its budget."

¹²"Ungelöste Probleme der gegenwärtigen Krisis," op. cit., pp. 17-18.

Whether he plans thereby to carry through the consumption goods expansion by means of public works or through direct loans to the public makes no difference. Thus the program is a combination of the initiating forces of the underconsumption theory and of the initiating forces of the overinvestment theory.

It thus appears that Ohlin is not sufficiently trustful of the powers of the entrepreneur-initiated investment process and, seemingly, is not fully certain that the entrepreneur is governed in the short run by his marginal costs relative to his marginal revenue and that the entrepreneur will expand his production as long as he at least makes his variable costs with a distribution thereby of his overhead over additional units of product. Furthermore, he must make some tacit assumption as to the rigidity of the economy which forces him to take this position. Ohlin, in fact, has adopted the theory advanced by Heckscher over a decade past. It was shown in Chapter IX that Heckscher developed a Wicksellian cumulative movement upward by allowing credit to both consumer and producer. In criticism of this hypothesis it was stated that Heckscher misunderstood the nature of the cumulative movement upward without consumer loans. The present writer wrote in comment:

All that is necessary for the process to get into motion is that the entrepreneurs find it advantageous to make use of the funds thus created for them and that there are no technical rigidities so that the production of capital goods will be carried through. This process in itself initiates a flow of income to both entrepreneurs and to other members of the economy.

It would thus seem that Ohlin must assume that there are present technical rigidities or else there must be some other factor present the awareness of which he does not express, in just so many words. It may be inferred that Ohlin is fearful of the entrepreneurs' evaluation of the risk present under a state of cumulation downward. Therefore in order to restore their confidence he proposes to initiate along with the capital goods investment program a loan program which will force up the price on consumption goods, thereby speeding up the investment process. It is a matter which Ohlin should make clear because of its importance for modern-day fiscal and business cycle policy.

In no small way is this synthesis of the overinvestment approach and the underconsumption approach of importance for such policy and the validity of the position thereby taken depends

largely upon further clarification of the theory involved.

There is another aspect relative to this synthesis of theory which must not be overlooked. The horizontal overinvestment theory adopted by Ohlin in his explanation of business cycles allows for an attack upon this problem which the vertical maladjustment approach does not do. The horizontal maladjustment theory of investment shows that continued saving may bring about an extension of certain industries so that a structural displacement follows for a large section of the economy, resulting in turn in the overproduction of capital goods in the sense that these goods produce too many consumption goods relative to other goods so that there is a decline in the income for the overextended industries relative to the other industries, while the total income of the economy is not as much as it would be under a condition where the marginal products for all industries were equal. This attack upon the problem brings the theory of the investment process into rather close alignment with the attack made by the underconsumption or oversavings theory.

Whether Ohlin would agree to the above interpretation of the overinvestment theory this writer cannot say, and whether he will also agree to the following inference cannot either be said. Since there is maldistribution of the products of the economy due to a structural displacement as described above, then Ohlin would presumably propose that the purchasing power effected by the loan program be directed towards the purchase of such goods as are not structurally displaced; otherwise how would such a program correct the maladjustment that prevails in the economy?

These and many other issues of the expansion process remain unsettled. There is, for example, the problem of how effective the attempt to raise prices by public borrowing will be. The extent of the price decline may already have been so great that no amount of borrowing or of public works may have any effect upon the prices. Or, to use the approach of the Swedes, if the entrepreneurs anticipate further price declines then it may be said that no amount of borrowing will resuscitate the investment process which is, after all, the important aspect in the situation. Then, this pertinent question may be asked, if in the first place the price decline is a product of maladjustment of the investment process, how will the raising of the prices bring about the correction thus needed? Of course, those who contend the investment

process became displaced in a vertical direction, may well hold all that is really necessary is the restoration of the former price level. However, it is impossible to deny the effect that horizontal maladjustment has had upon the system; in this country it is only necessary to point to the agricultural industry, to textile industries, to the shipbuilding industry, and to the railroads, and to the building construction industry to show how the cycle of 1927-? would up in a spiral. The greatest structural displacement in all history of the world took place after the World War. Ohlin, himself, has demonstrated the importance of this kind of displacement in his The Course and Phases of the World Economic Depression. Why he should, therefore, advocate this form of price restoration is indeed difficult to understand, unless he hopes thereby to raise the incomes of the groups so affected; yet that alternative is hardly a corrective; rather it tends to further maladjustment. Witness the state of the American railroads at the present time.

If it were true that the only forms of maladjustment of the investment process that could happen were the vertical, then a price restoration may have the desired effects. But the contrary holds; there is no need for more railroads and there is no need for more farms; to raise the prices for their products, unless corrections are made, means only more price declines later.

A Note on the Expansion of the Economy

Although the subject of economic expansion calls for a complete treatise in itself, it may be of value to examine some of the theory propounded in Sweden during the earlier days of the World Economic Depression. It is to be understood that most of the writings on the subject have dealt principally with the determination of proper economic policy during the depression, but certain theoretical differences have arisen which serve to establish some of the difficulties already indicated.

There are two schools of theory which provide the background for the economic policy of recovery, the expansionists and the contractionists. The former propose some kind of "reflation," at least the stopping of the precipitous and cumulative decline of the depression, while the latter argue that the only thing to do is "to purge" the system of the fevers of the boom period,

thereby letting costs contract to a point where again the forces of "inflation" will have been leveled out. In Sweden, the chief contributors to the theory thus distinguished, have been Myrdal, Bagge, Ohlin, Johan Akerman, Lindahl, Hammerskjöld, and Johansson.

The contractionists held the floor for a time after the departure from the gold standard in September, 1931, but later reactions set in. As far as this earlier group was concerned, the departure from a gold standard was indeed a great misfortune, and it continued to advocate for some time a return to gold. More later writings of the contractionist variety, e.g., Johan Akerman's, have been concerned with the reduction of costs of production and with the enforcement of an increase in real savings.

Ohlin became the representative of the expansionist group in the debates with the later contractionist group, which had Johan Akerman for its representative. (It is this writer's opinion that Ohlin, as well as Myrdal, Lindahl, Heckscher, and others were strong supporters of the internationalistic policy of the Labor Party which was then in power, while Akerman and Bagge became affiliated with the Conservatives.) The theory of Ohlin appears in the article in the Weltwirtschaftliches Archiv, previously cited, and in Det ekonomiska läget, a publication of the Swedish Federation of Industries, edited by Johan Akerman (whose arguments also appeared therein), in another article published by the Swedish Bankers' Association, and in a contributory part to the report of the Unemployment Commission, 1934.

As has been shown, Ohlin took the position that further reduction of costs would become only more inflammatory and the cycle may not hit the bottom. Akerman's position had been that the impulse to recovery could not come from the consumption side, but must come from the capital goods side, and that a "selective" cost reduction coupled with an increase in savings would aid the restoration of activity in the capital goods industries in which curtailment of production had been the greatest.

Akerman's argument is as follows:

If this lowering (of costs) is considerable and simultaneous for the whole economy, then it takes on the character of a decline of the cost level to a bottom position. The deflationary price decline will not appear immediately, rather a betterment of rentability is the direct result. Within those industries which produce real capital of a long construction period, there will be a direct increase in new production in anticipation of the fact that within a year or so this increase will have been justified, when the new capital is ready

for use. The capital goods industry is hence a priori, speculatively constituted, while the consumption goods industry takes its impulses from the present demand.

Ohlin's answer is somewhat as follows:

During periods of depression and price decline, the real investments are insignificant, not because the individual savings have declined to the same extent, but because a part of the savings is not used to demand production goods. The savings are used not for the purpose of capital production but for the purpose of meeting losses in enterprise and to some extent for consumption by the unemployed.

how, then, can savings be equal to investment? What Ohlin thus means by savings is not clear in this case. If he has reference to savings from the income of previous periods, then he is concerned with "liquidation" of those savings. If he means savings of the current period, then those with no incomes must be borrowing from those whose incomes have not been reduced or not greatly reduced. The first situation has no significance for the problem, while the second may have. If income of current periods is greatly reduced, then the consumption level will also fall, since the savings surely will not be maintained. (It, of course, may also be asked if there is any saving involved when one group turns over to another group funds for consumptive purposes.)

It would indeed be quite easy to disagree with Akerman on either ground--cost reduction or increased savings. His stipulation that the cost reduction for the whole economy be simultaneous has no meaning in light of the numerous inflexible costs and, as Myrdal points out, contractual obligations which cannot be reduced. When the marginal product of capital has fallen possibly to a negative value, how then can entrepreneurs be stimulated to expand capital goods production, for it is during the depression that the profit and loss account is more than ever determinate!

To note another position, Myrdal, as a disciple of the expansionist theory, has argued as follows:

Even if we do not wish to assume that the conjunctural causes are primarily within the sphere of money and credit policy, we can use monetary means to modify the courses of the conjuncture. Hence, there must be such a monetary policy, the living costs should be held unchanged.

Does Myrdal, who would hold that the business cycle is a "real" capital phenomenon, advocate a policy which is a contradiction to this postulate by suggesting a stimulation of consumption goods prices and which is the policy generally accepted by Ohlin, Keynes, Heckscher, and the New Deal? In the long run, the prices of capi-

tal goods are no doubt a function of the prices of their products, but in the short run are prices of consumption goods any more an independent variable than the prices of capital goods? Is the process of expansion a function of an upswing of prices alone, or are there other determinants of its inception and continuance? It would seem to be the latter!

Johansson presents the thesis that it is not necessary to reduce real wages as does, for example, Keynes. On the contrary, it is possible to increase real wages and still induce an expansion process. It is impossible to develop his rather lengthy and complicated theory herein, but one comment may be made, does this proposal and do similar proposals give account to the relative amounts of capital and labor in the economy? Whether Johansson may be accused of this deficiency it cannot be said, but there are a number of economists who seem nowadays to have forgotten that there is a theory of wages and a theory of capital, both of which suggest that there must be proportions of the two which are in accord with the supply of each and with their relative productivities. Is it not possible to say that unemployment may be caused by too high wages as well as by too high a rate of interest? If not, then it seems to this writer that there are altogether too many things in economic theory which have been nothing more than scholastics. Mr. Keynes would, to be sure, say that it is because of the too high wages that it is advocated that the interest rate be lowered so that the investments be restored relative to wages. But, why not reduce wages relative to the state of investment? Oh, that becomes cumulative. But were not investments too high relative to labor, when the crisis appeared? Was it not the overproduction of capital goods which brought the unemployment? And, therefore, would not an interest reduction be necessary? But there seems to be no answer other than that prices must again be raised!

2. The Oversavings Theories

Birck's theory of underconsumption provides a partial answer, if not a complete and satisfactory answer, to some of the questions raised. Because of the introduction of new techniques which make the productivity of labor low, it may be said that (a) wages are too high relative to the productivity of labor and (b) there is insufficient capital to return labor to work at the wages

which they demand. Therefore one happy solution to the restoration of equilibrium relationships between capital and labor at the present prices of labor is to increase the quantity of capital. Whether or not this is the specific point that Myrdal, Ohlin, Keynes, and others have in mind when they advocate the raising of the price level through monetary means and through public works makes no great difference. The point is that wages are too high and that they may be either lowered or else the productivity of capital be lowered so as to equalize wages and interest, and the indirect way to this goal is through the monetary means suggested on all sides.

It is questionable what Birck would advocate concerning monetary policy since he seems to talk of real savings, i.e., savings set aside from real income (echte Sparmitteln and not "forced savings") and, therefore, bank created deposits may not serve the same purpose. In the eyes of those who advocate the inflation program, all that is necessary is to increase investments and, therewith, savings will be increased. For them interest becomes the function of the supply and demand for cash or the supply and demand for credit, as the case may be, and if it is low then investments will be increased. In reality, whether real savings be increased or whether monetary measures be used to induce investment does not matter much. The solution appears to lie in increasing the capital structure by one means or the other. (And it really makes not an iota of difference whether there is voluntary or involuntary unemployment.)

